RECONSIDERING THE WORKING WATERFRONT: STRATEGIES FOR THE FUTURE OF NEW BEDFORD , MASSACHUSETTS

by
J. Matthew Carpenter
Bachelor of Science
Iowa State University
Ames, Iowa
1992

Submitted to the Department of Urban Studies and Planning on May 23, 1996, in partial fullfillment of the requirements for the Degree of

Master of City Planning at the **Massachusetts Institute of Technology**
June, 1996

Signature of Author:. .....
Department of Urban Studies and Planning
May 23, 1996

Certified by:..... .....
Dennis Frenchman
Senior Lecturer in Urban Design
Thesis Supervisor

Accepted by:..... .....
J. Mark Schuster
Chairman, Department Committee on Graduate Students

RECONSIDERING THE WORKING WATERFRONT: STRATEGIES FOR THE FUTURE OF NEW BEDFORD

by:
J. Matthew Carpenter

Submitted to the Department of Urban Studies and Planning on May 23, 1996, in partial fulfillment of the requirements for the Degree of Master of City Planning.

Thesis Supervisor:

Dennis Frenchman
Senior Lecturer in Urban Design

ABSTRACT

This thesis offers an analysis of New Bedford, Massachusetts' working waterfront, and a strategy to guide its redevelopment. The principal idea is that introducing new commercial and recreational uses can help rebuild the harbor economy, without compromising the livelihood of water dependent industry. The motivation for this investigation is the fact that the leaders in many traditional seaports, such as New Bedford, perpetuate the myth that industrial, commercial and recreational uses are incompatible and mutually exclusive along a waterfront. This thesis attempts to debunk the myth of incompatibility by offering a vision of a vital and sustainable mixed-use waterfront. In pursuit of this agenda, the thesis is structured into two parts. Part I establishes the context and background of the harbor by analyzing the current economic crisis, history of planning efforts, instruments of change, and case studies that illustrate possible redevelopment directions. Part Two translates this analysis into four key strategies to guide redevelopment efforts. The strategies of balancing uses for mutual benefit, creating catalyst development opportunities; connecting the harbor to regional investments; and developing an intermodal transportation network are then applied towards plans for three key areas of the harbor.

ACKNOWLEDGMENTS

I have had the good fortune over the past two semesters to participate as a team member on a challenging and timely investigation into the future of New Bedford Harbor. This thesis represents the culmination of my work, and includes important contributions and insights from other members of the MIT New Bedford Harbor Study Team. Under the direction of Dennis Frenchman and Peter Roth, the team included Jim Vandermillen, Raj Singh, Jose Lee-Chibli, King Burch, Mike Lohse and myself. Specifically, I would like to thank Raj Singh for his New Bedford Harbor GIS maps; Jim Vandermillen, whom I worked with to understand the community and public policy issues facing the harbor; Jose Lee-Chibli, whom I worked with to identify the landside issues facing the harbor; and Peter Roth for incisive direction throughout the initial study. Special thanks to Dennis Frenchman for providing energy, direction and encouragement through both phases of my work on New Bedford Harbor. Dennis was instrumental in helping me sort through the details to identify the key ideas and themes that shape this thesis.

I also thank Dennis and my reader, Gary Hack, for the valuable insights and expertise they have offered me over the past two years. Through coursework and projects at MIT and abroad, I have learned a great deal from working under their direction. Dennis and Gary have strongly influenced my work and leave me excited about practicing in the field of urban design.

A host of other people also deserve thanks for taking the time to provide information, leads, and ideas about the future of New Bedford Harbor. Special thanks to Laurel Rafferty -- Massachusetts Coastal Zone Management; Tony Souza -- WHALE; Molly Fontaine, David Kennedy, Marty Manley and Marc Rousseau -- City of New Bedford; Captain Michael Taylor -- Maritime International; Scott Soares -- SRPEDD; Les Lewis and Charlie Gibson -- Massachusetts Department of Environmental Management. I also thank Jason Bromberg and Marsha Orent for their feedback and advice on my earlier drafts.

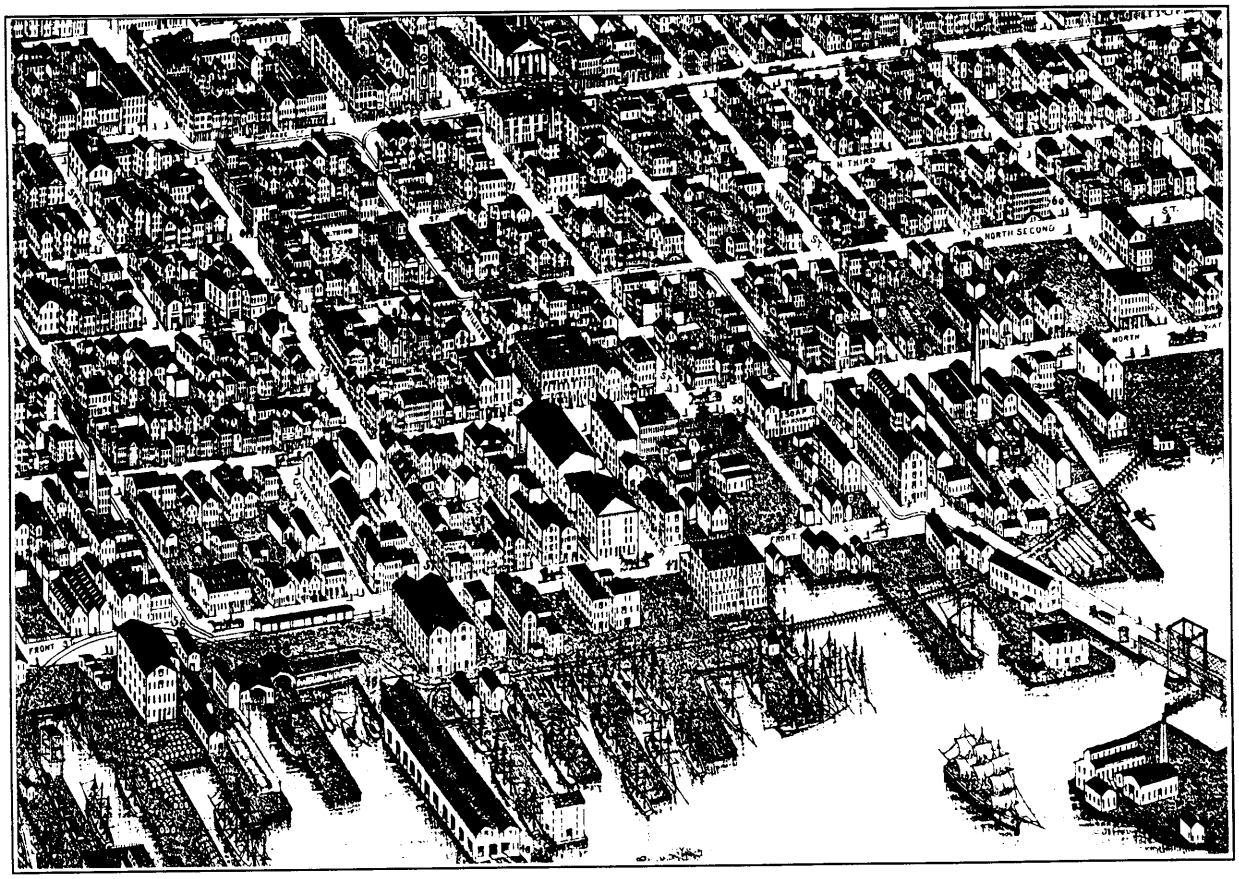
This thesis is dedicated to the memory of my grandmother, Pearl Neuhalfen, and the continuing love, support and encouragement of my parents, John and Sandra Carpenter, that has made all of this possible.

TABLE OF CONTENTS

INTRODUCTION

"But think not that this famous town has only lampooners, cannibals and bumpkins to show her visions.
Not at all...nowhere in all America will you find more patrician-like houses;
parks and gardens more opulent, than in New Bedford."

Figure I-1: Birds Eye View of New Bedford, 1876



The 1840s whaling port Herman Melville describes in *Moby Dick* has witnessed significant change in the 150 years since he wrote the description. Over this period, the harbor has evolved from a rich whaling port to the center of busy textile mills, to its current role as a center of fishing and shipping. Each of these periods has brought

with it a new set of circumstances and priorities to which the New Bedford Harbor has responded by modifying its form and character.

As New Bedford prepares to enter the next century, it is once more witnessing major changes "on the waterfront." Economic, environmental and technological changes are acting upon the waterfront and leaving the community at a critical crossroads. The goals and issues of immediate concern include rebuilding a shrinking economic base, restoring the physical environment, and preserving the area's unique history and architectural character.

Despite the challenges which lie ahead in revitalizing the harbor, its existing social, physical and historical resources offer the seeds for successful redevelopment. The many attributes of the harbor represent the investment of capital, and the institutional and economic commitments of dedicated citizens. The quality of the physical assets and community support present offer evidence that future harbor interventions can be successful.

There is a fundamental need for a clearly articulated redevelopment strategy that facilitates communication between key actors and coordinates their efforts. A key element in this strategy is a vision of the harbor's future function and form that balances key interventions with the conservation of important existing uses.

This thesis offers a strategy and key proposals to guide harbor redevelopment efforts. The principal idea is that a mix of uses are possible along the working waterfront. For too long traditional seaports, such as New Bedford, have maintained the myth that industrial, commercial and recreational uses are incompatible and mutually exclusive along a waterfront. Through case study examples and proposals for three key areas of New Bedford's harbor, this thesis attempts to debunk the myth of incompatibility by offering a vision of a vital and sustainable mixed-use waterfront.

In pursuit of this agenda, the thesis has been structured into two parts. Part I establishes the context and background for harbor planning in New Bedford, while Part II offers redevelopment strategies and plans for three key areas in the harbor.

PART I: CHANGE ON THE WATERFRONT

■ Chapter One: Crisis and Hope

This chapter emphasizes the timeliness of redevelopment efforts. The traditional harbor economy is currently depressed, however, positive instruments of change are also now present. Through offering background on the current economic crisis, and then explaining the redevelopment options possible through State regulatory reform, capital funding and tourism development the chapter emphasizes that the time to act is now for harbor redevelopment.

■ Chapter Two: The Challenge of Planning for New Bedford Harbor

In order to identify the source of the current crisis, this chapter reflects back on the history of the harbor to identify important issues to consider. The harbor's boom and bust cycles of development are a reflection of ad hoc planning, poor coordination of efforts and a narrow vision of appropriate waterfront uses. After summarizing key historical themes for New Bedford's waterfront, the chapter identifies four key planning issues to confront today: land use conflicts, environmental disputes, poor communication between interest groups and regulatory confusion.

■ Chapter Three: Case Study Directions for the Working Waterfront

Case studies are offered to illustrate relevant visions of a mixed use redevelopment strategy. Examples from both national and regional working waterfront redevelopment efforts are included. Fall River and Gloucester are discussed to illustrate directions for redeveloping as either a working or a tourism based waterfront. Efforts in Seattle are then offered to explain that a more sustainable direction is the integration of both tourism and marine industrial uses to create an integrated mix of uses that create economic cross-benefits.

PART II: HARBOR PLAN

The second part of the thesis applies the background, context and analysis from Part I to develop strategies for New Bedford Harbor and applies them towards three key areas of the harbor.

■ Chapter Four: Strategies for the Harbor

This chapter argues that New Bedford should seek a sustainable mix of uses for its waterfront. Through subarea planning, the central idea is that investments should be focused on establishing a mix of complementary uses because no one use of the waterfront will transform it. The potential synergy of linking traditional maritime industry, tourism and recreation together is the key to transforming New Bedford's waterfront. In order to plan key interventions that will create benefits to both industry, tourism and recreation alike, four key strategies should guide the creation of a successful mixed-use waterfront.

The four key strategies are:

- Balancing land uses to create mutual benefit;
- Creating catalyst development opportunities;
- Connecting the harbor to regional investments;
- Developing an intermodal transportation network;

After establishing the key strategies for harbor redevelopment, the chapter explains why looking at the harbor in terms of subareas is the key to organize future redevelopment efforts. Six harbor subareas are identified:

- Urban Waterfront
- Harbor Terminals
- Commercial Islands
- Mill Zone
- Open Space and Recreation
- Residential Areas

Following the identification of subarea level planning, the remaining three chapters offer plans for the three key subareas: Urban Waterfront, Harbor Terminals and Open Space and Recreation .

■ Chapter Five: Urban Waterfront Plan

As the "heart" of New Bedford's waterfront, the redevelopment of this subarea is the key to proving that tourism and marine-related uses are compatible. The proposals offered argue that limited commercial and tourism based uses can be introduced to the waterfront without compromising the livelihood of marine related industry. The main focus for the integration of uses within the Urban Waterfront is a development strategy that links tourism related commercial development with public investments to upgrade the infrastructure of the commercial fishing and cargo industry. With a strategy centered on investments for mutual benefit, public access and tourism can develop in a manner that does not interfere with maritime commerce, but actual complements it.

■ Chapter Six: Harbor Terminals Plan

This subarea should be redeveloped as the cornerstone for re-establishing New Bedford as a center of maritime industry and trade. The Plan explains that intermodal connections and sophisticated infrastructure will define prosperous ports in the future. If New Bedford is going to compete within an increasingly interconnected, global economy, it must reposition the Harbor Terminals for the future. For too long the community has not realized the potential of its Terminals because of a lack of modern infrastructure, poor access and a narrow market focus. Proposals in the Plan are focused on establishing intermodal transportation connections and introducing new marine based industries to create a sustainable maritime economy.

■ Chapter Seven: Open Space and Recreation Plan

As New Bedford's harbor economy moves from a history of heavy industrialization to a future of new technologies and information industries, this Plan suggests that

introducing open space and recreation to the harbor environment will be essential. Improving the appearance of the harbor and developing open space and recreation

areas would add enormous value to the harbor environment. The Plan identifies a number of both active and passive open spaces throughout the harbor that can expand public access to the waterfront without compromising the needs of maritime industry. The key proposals include increasing recreational boating, conserving the harbor islands and creating a waterside marina and park.

■ Chapter 8: Harbor Plan Implementation

This chapter offers a strategy to realize the proposals offered in the Urban Waterfront, Harbor Terminals and Open Space and Recreation Plans. Since the relationship between between community interest groups and regulatory authorities is very important, the implementation strategy emphasizes projects that offer mutual benefits. The chapter is divided into two sections to explain the implementation strategy. The first section describes the key projects to pursue and phasing considerations for the three subarea plans. The second section then identifies the key actors and instruments to realize redevelopment efforts.

1 CRISIS AND HOPE

This chapter begins by offering the physical background and context of the New Bedford-Fairhaven Harbor and then explains the economic challenges currently facing the area. After analyzing key economic indicators of the current "crisis," the second half of the chapter discusses future redevelopment opportunities possible through State regulatory reform, potential capital funding and tourism development that offer "hope" for the New Bedford-Fairhaven Harbor.

BACKGROUND

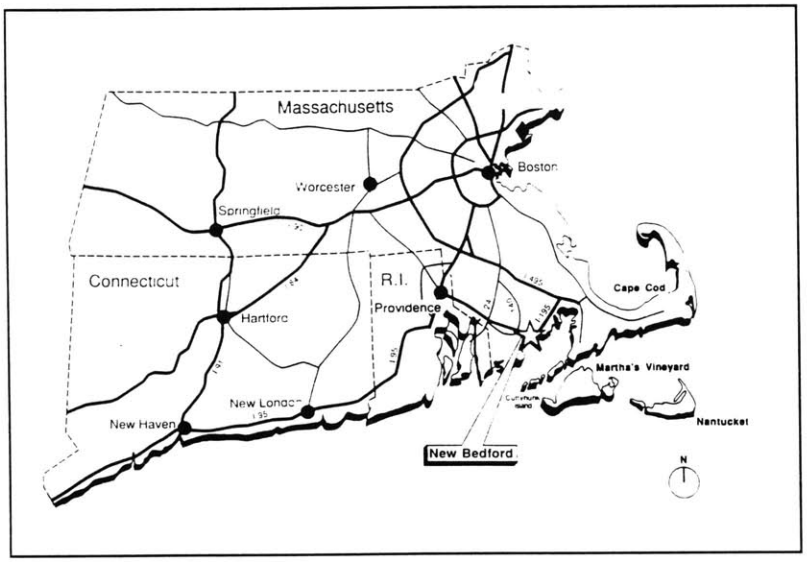
■ Context

The City of New Bedford and Town of Fairhaven are located on the southeastern coast of Massachusetts where the Acushnet River empties into Buzzard's Bay, as illustrated in **Figure 1-1** and **1-2**. As a natural, deep harbor that is well protected by a man-made hurricane barrier, the New Bedford/Fairhaven Harbor has thrived for generations as Buzzard's Bay only developed commercial port. Its fertile and farmable land dotted by rivers and lakes attracted the early settlers. Its deep and well-protected harbor later drew the whaling industry from Nantucket. Later still, this same harbor and its proximity to the rich fishing grounds of the George's Banks and Nantucket Shores made the city the richest fishing port in the nation. Throughout these successive industries, the City has been dependent upon strong transportation connections to the rest of the region. Substantial air, rail, highway and water transportation infrastructure has allowed easy transport for industrial goods and products from the area to markets throughout the region and world.

As the fourth largest city in Massachusetts, with a 1990 population of 99,922 (US Census, 1990), New Bedford continues to illustrate a rich industrial, social, and cultural history derived from its access to the sea. The community's rich trading contacts are reflected in a diverse population that includes persons of Portuguese heritage, who account for more than half the population, and a sizable population of African-Americans and Cape Verdeans.

New Bedford has long been the primary urban center for the eight coastal communities that border the Bay. In addition to New Bedford and Fairhaven are the towns of Dartmouth, Acushnet, Westport, Mattapoisett, Marion and Wareham. Although the communities of the Bay share a regional identity, each has evolved

Figure 1-1: Regional Setting



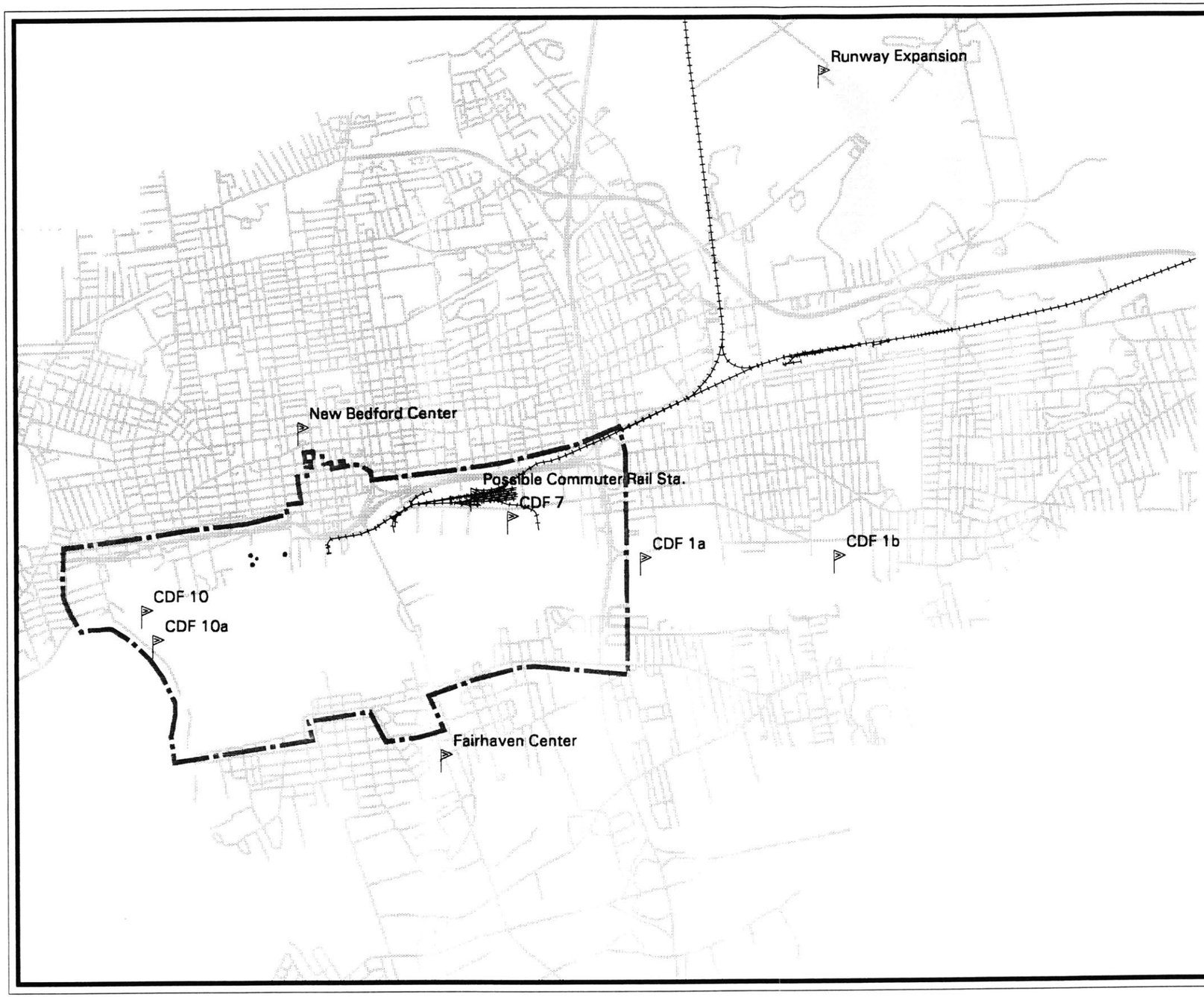
quite differently and retains a distinct character. New Bedford has remained the region's commercial center, while neighboring communities, such as Dartmouth, have experienced significant suburbanization over the past 25 years.

■ Land Use Pattern

There have been significant changes in the land use pattern of the New Bedford/Fairhaven Harbor over time. Edges of the harbor in New Bedford and Fairhaven have evolved a distinctly different land use pattern and character, as illustrated in **Figure 1-3**.

The New Bedford side of the Harbor reflects the three major industries that have successively commanded the waterfront: whaling, textiles, and fishing. Today, the New Bedford waterfront is dominated substantially by fish processing and packaging

Figure 1-2
Regional Context



LEGEND

- New Bedford/Fairhaven
- Airport
- Planning Area Boundary
- Roads
- Rail Lines

Sources

Buildings and Parcels: City of New Bedford digital data.
Water Depths: NOAA Nautical Chart, 1993 (1:20,000).
Transportation-New Bedford: City of New Bedford digital data.
Transportation-Fairhaven: MassGIS digital data, 1980s (1:100,000).

0 625 1250 1875 2500

SCALE IN FEET

Figure 1-3
Predominant Land Uses

LEGEND

- Natural Areas
- Open Space
- Underused Industrial
- Vacant
- Fishing-related Industry
- Industrial, Unspecified
- Urban Waterfront
- Commercial, Unspecified
- Fishing-related Commerce/Service
- Residential Districts
- Institutional
- Planning Area Boundary

Sources

Buildings and Parcels: City of New Bedford digital data.
Water Depths: NOAA Nautical Chart, 1993 (1:20,000).
Transportation-New Bedford: City of New Bedford digital data.
Transportation-Fairhaven: MassGIS digital data, 1980s (1:100,000).

N

0 625 1250 1875 2500

SCALE IN FEET

plants, vessel docking, storage and repair facilities. These are interspersed with underutilized industrial buildings and vacant parcels.

Beyond the immediate waterfront, adjacent land uses on the New Bedford side includes historic commercial areas and residential neighborhoods. Route 18 creates a strong edge on the west of the harbor that separates the waterfront from the downtown. To the north and south of New Bedford's waterfront are areas dominated by deteriorating textile mills, while areas beyond in both directions are predominately residential. The New Bedford waterfront abuts the downtown business district and is separated only by Route 18. The Waterfront National Historic District occupies a transitional area between the downtown core and the Harbor. Sitting on a sloping hill overlooking the Harbor, the historic waterfront area is characterized by cobblestone streets and handsome nineteenth-century buildings housing civic and commercial uses.

The land use pattern of Fairhaven's waterfront is strikingly different from the New Bedford side of the Harbor. Although most of the Town's waterfront is primarily residential, the central Fairhaven waterfront is dominated by marine-related service and repair businesses that support the fishing fleet. Additionally, the Fairhaven waterfront supports recreational boating with several smaller marina facilities. Along with Pope's Island, these marinas contain between 1,000 and 1,100 recreational boat slips (HDC, 1996).

ECONOMIC CRISIS ON THE WATERFRONT

Today, the New Bedford-Fairhaven waterfront is increasingly defined by obsolete structures, deteriorating infrastructure and underutilized land that is a reflection of a harbor economy in transition. The traditional harbor economy of New Bedford-Fairhaven is suffering after decades of a heavy reliance on commercial fishing and processing. The harbor and the community as a whole are coping with a precipitous decline in employment, income, and harbor property values. The first part of this chapter offers economic indicators that reveal the current crisis facing the harbor

economy, while the second part explains how regulatory reform and capital funding initiatives by the State can potentially offer positive change.

■ Declines in the Fishing Industry

Despite the current economic crisis facing New Bedford, it remains the home of the largest fishing fleet on the East Coast -- a total of 412 vessels fish regularly out of the port. Most of these commercial fishing vessels are docked at the Harbor Development Commission (HDC) facilities on New Bedford's Central Waterfront, and on the Fairhaven side of the harbor. A smaller number use the docking facilities at the North and South Terminals.

The industry directly employs approximately 2,155 fishermen, while over 200 directly related shore-side service industries and 75 processing plants and wholesalers contribute another 6,000 employees. The related shore-side service industries include electronics firms specializing in radio and navigational equipment, splicers and riggers, welders, marine chandlers, pump-out services, fuel dealers, engine sales, service and repair facilities, rail and lift services, ice houses, etc.

The rapid decline in the fisheries economy has occurred because the two types of catch for local fisheries, groundfish and scallops, are each facing serious declines in stock and an increase in government restrictions. The volatile nature of this dependence on groundfish and scallops is evident in the relative prosperity that only recently was still evident. Throughout the late 1980s and early 1990s, the value of New Bedford's fisheries landings exceeded that of most other U.S. ports. In 1991, New Bedford ranked first in the nation in total revenues from fishing with 106.4 million pounds landed valued at $157.7 million (Governor's Commission on Port Development, 1994).

Dependent on groundfish stocks in the George's Bank area, the industry has suffered from overfishing in the 1980s. In just the past few years, revenues have fallen substantially. From 1993 to 1994 alone, revenues declined by half, from $160 million to $83 million (NMFS, 1995). The National Marine Fisheries Service shows that the average annual landings for cod in Georges Bank from 1986 to 1994 was 61

million pounds; projected landings for 1995 are only 6.75 million pounds. Total groundfish landings (haddock, yellow tail flounder and cod) in Georges Bank have also faced a precipitous decline; the total of 90,000 metric tons in 1992 has fallen to slightly less than 30,000 metric tons in 1994 (NMFS, 1995). The Harbor Development Commission estimates that these serious declines have reduced the fishing fleet from a peak of 400-450 boats to about 250 boats today.

Recognizing the decline in fishing stocks, government restrictions on the industry will further weaken New Bedford's fishing economy. One of the important initiatives, Amendment 5, was intended to replenish the groundfish stocks, but the goals were not met. Stricter regulations in Amendment 7 that was recently passed will further constrict the fishing industry by an estimated 50% (NEFMC, 1995).

Scallopers are also struggling against falling catches and regulations designed to reduce fishing effort and days at sea. The objective of regulators is to reduce scallop catches by 50% within five years in order to allow fish stocks to recover to a sustainable harvest level. The Atlantic Sea Scallop fishery has operated under a management plan that took effect in 1982. NEFMC (1993) proposed strict new regulations as to size limits, gear, and fishing seasons and effort in order to prevent overfishing of the stock. Vessels are currently required to reduce days spent at sea, declining each year over a seven year period, in order to meet the goal of reducing total effort by 40%. Thus, New Bedford's scallop fleet is currently limited to 180 days at sea per year, and will have to operate under diminishing days at sea for several years to come.

■ Problems for Fish Processing

Along with the declines of commercial fishing, processing activity in New Bedford Harbor is also struggling. These problems are a result of the declines in local fishing, as well as industry trends that are adversely affecting the entire state. An article in *Business Week* explains that the processing and distribution of fish products is consolidating into larger businesses that operate on lower profit margins but larger volume. The result is that many businesses are being forced out of the industry (Burns and Moukheiber, 1996). This certainly seems to be evident in Massachusetts,

where employment in fish processing was 1,761, in 1994, down 40% from the 2,902 workers employed in 1985 (Governor's Commission on Port Development, 1994).

Although definitive data on processing employment levels in New Bedford are unavailable, anecdotal evidence suggests that processing employment has shrunk by nearly 50% in just five years to around 1,000 workers (Taylor, 1996). With the exception of Maritime International, a cargo and fruit shipper with operations at several U.S. ports, the major employers at the waterfront remain fish processing companies. In the list of major waterfront employers below, it is estimated that each of the processing businesses identified has experienced employment declines (Burch, 1996).

Table 1-1: Major Waterfront Employers (1996 estimates)

Maritime International	100 employees
Atlantic Coast Fisheries	100
Kyler Seafood	100
Mar-Less Seafood, Inc	100
Worldwide Seafoods, Inc	80
Northern Wind, Inc	70
Atlantic Gem Seafoods	50
Carlos Processing Co.	50
Met Fisheries, Inc	50

■ A Poor Real Estate Market

Reflecting the poor harbor economy in New Bedford has been the high vacancy rate of existing waterfront facilities and limited sales activities. Relatively little recent sales activity has occurred along the waterfront. Most of the commercial buildings along the waterfront are empty, including a historic 19,000 square foot office/restaurant property next to State Pier. Currently listed for $850,000, this large commercial property was once the cornerstone of a redevelopment effort and was appraised at well over $1,000,000 in the 1980s (Souza, 1996). There are also an increasing number of foreclosed properties adding to the blight on the waterfront.

Further evidence of the weak waterfront property market is in the low leasing rates. The City of New Bedford, through its Harbor Development Commission, owns various piers and property along the waterfront. In the South Terminal Marine Park a large number of fish processing structures are vacant, despite the incentive of 99-year land leases at rates between two to four cents per square foot.

As with other economic indicators, the poor harbor economy reflects the economic depression in the greater community. Assessed values for real property in New Bedford have declined through the fiscal years 1993-1995 (Burch, 1996):

Fiscal Year Values

1993: $2.32 Billion residential, $376 million commercial, $247 million industrial
1994: $2.29 Billion residential, $371 million commercial, $242 million industrial
1995: $2.13 Billion residential, $371 million commercial, $235 million industrial

Although the New Bedford harbor economy is poor, there are limited maritime industries that are weathering the current economic storm. One example is Frionor Norwegian Frozen Fish, Ltd. in North Terminal, which has compensated for declines in local stocks by receiving frozen products from European countries for processing (Eysteinsson, 1996). Along with similar operations at other processors, Frionor Norwegian is along the waterfront but is not water dependent. Fish is flown into New Bedford, trucked to the waterfront processing operations, and finally sent out to market. Another rare glimmer of economic vitality is that cargo activities at the Maritime and North Terminals in New Bedford remain very active, while the 1,100 slips at the local marina maintain a very high occupancy rate (Manley, 1996).

■ The Overall New Bedford Economy is also Troubled

Despite the few examples of prosperity, the declines in the traditional fishing and processing sectors mirror the poor economic conditions throughout the City of New Bedford. Textile and other manufacturing businesses in the city were hit hard by the national recession in the late 1980s and early 1990s with serious employment declines. Although manufacturing still accounts for a larger percentage of total

employment in New Bedford than any other economic sector, total employment figures reveal a net loss of jobs between 1985 and 1994 (US Census,1990).

There have been declines in nearly all sectors of New Bedford's employment base over the past ten years. The service sector is the only one with employment growth. Because of these employment declines, New Bedford's unemployment was the highest among Massachusetts major cities during 1992-94, despite the fact that the labor pool has actually declined over the past ten years (Burch,1996).

Table 1-2: New Bedford Unemployment

Year	Labor Market Area	Massachusetts
1992	12.4%	8.5%
1993	10.3%	6.8%
1994	9.9%	6.0%

Citywide Employment

Manufacturing continues to dominate New Bedford employment, but at a reduced level, while job growth in Services has occurred. Fishing, while it contributes to a large part of the City's identity and economy, directly employs relatively few people. The City's 2,252 public and private enterprises employed 47,352 persons in 1985. By 1994, although the number of businesses had risen slightly to 2,277, total employment had fallen to 37,277, a loss of 10,075 jobs. The loss of jobs was spread across almost all industry sectors. Manufacturing sectors of the economy, comprising over 43% of employment in 1985, remained the leading sector but had fallen to 33.4% of total employment, indicating a loss of approximately 8,100 jobs.

Wholesale and Retail Trade also lost some 1,333 jobs during the period and declined from being the second leading employment sector in 1985, to the third in 1994. The Services sector was the only broad sector to show substantial growth over the ten

year term, adding over 1,100 jobs and moving from 16.4% of total employment in 1985, to 23.8% of total employment in 1994.

Other sectors demonstrated employment gains and declines. New Bedford's Government sector employment increased relative to the rest of the workforce, moving from 10% up to 12.8% of total employment in 1994. Fishing, Agriculture, and Forestry, made up only 3.4% of workforce employment in 1985 -- or approximately 1,600 jobs. In 1994, this sector had declined to 2.3% of total employment, indicating a loss of approximately 750 jobs over the period.

The remaining sectors of employment, Finance, Insurance, Real Estate; Utilities and Transportation; and Construction contributed less than 10% to total employment. Among these sectors, only Utilities and Transportation did not decline as a percentage of total employment over the term.

Table 1-3: Employment Trends In the City of New Bedford
(Massachusetts Department of Employment and Training)

	Prcentage of Total Employment		
Industry Sector	**1985**	**1994**	**Change (#jobs)**
Manufacturing	43.4%	33.4%	(8,100)
Wholesale/Retail Trade	17.3%	18.4%	(1,333)
Services	16.4%	23.8%	1,106
Government	10.0%	12.8%	36
Finance, Insurance, Real Estate	4.0%	3.5%	(589)
Fishing, Agriculture, Forestry	3.4%	2.3%	(753)
Utilities, Transportation	3.1%	4.1%	60
Construction	2.5%	1.9%	(476)
Total Business Establishments	2,252	2,277	25
Total Employment	47,352	37,277	(10,075)
Average Annual Wage	$15,477	$24,513	58.4%

Major Employers

New Bedford's ten largest private companies employed 8,525 workers in a mix of manufacturing (64%), services (23%), and public utilities (13%) jobs in 1995. The following list of major employers underscores the fact that the largest sources of community employment are no longer located along the waterfront. In **Table 1-3** above, the largest waterfront employer has around 100 employees. Burch identifies the largest employers in New Bedford for 1995:

Table 1-4: Major New Bedford Employers

St. Luke's Hospital	2,000 employees
Titleist & Foot Joy Worldwide	1,500
Com Electric	1,100
Polaroid Corporation	800
Aerovox Inc	750
Acushnet Rubber Company	750
Cliftex Corporation	500
American Flexible Conduit	410
Teledyne Rodney Metals	400
Ottaway Newspapers, Inc	310

Income

Reflecting the economic weakness of the New Bedford economy is the low median household income. As **Table 1-5** illustrates, approximately 25% of New Bedford households earned less than $10,000 in 1989.

Table 1-5: Income Distribution (US Census Data)

City Of New Bedford

Household Income Distribution	**1989**
<$10,000	25.4%
$10,000 to $24,999	28.3%
$25,000 to $34,999	16.1%
$35,000 to $49,999	16.4%
$50,000 to $74,999	10.5%
$75,000 +	3.3%

Median household income for 1989 was $22,718 in New Bedford, $30,037 in Fairhaven, and $36,952 in Massachusetts. Although approximately 34% of households in Massachusetts earned more than $50,000, only 14% of New Bedford households did so.

■ An Uncertain Future for Traditional Industries

Although replenished groundfish stocks hold hope that the fishing industry will rebound in the future, other market forces will still lead to substantial changes in the traditional fishing and processing industries in New Bedford. Market consolidation and the need for modern infrastructure cast a cloud of uncertainty of their future role in the New Bedford Harbor economy. Overall, industry changes will likely lead to a demand for fewer fish boats and processing operations with more efficient facilities.

Prospects for the Fishing Industry

The New Bedford fishing industry faces consolidation over the near and mid-term as the industry deals with the financial consequences of overcapacity and declining catches. Regulations designed to stabilize catches will reward those fishing boats strong enough to survive the projected five to seven year period for groundfish stocks to replenish. As the shakeout occurs and boats and fishing permits are available for sale, the trend will be towards well capitalized boats, resulting in fewer owner-operators and more fleet operations (Burch,1996). Even if a large number of New Bedford's commercial fishermen weather the storm, other market forces working against growth of fishing include improved aquaculture production which is becoming cost competitive and gaining market share.

New Bedford's fishing economy can only become competitive with other harbors again if strategic infrastructure investments and a stronger market focus are made. Given the advantages of its Harbor and its location near major fishing grounds, fishermen may prefer it to other locations if necessary investments are made to upgrade facilities to match or exceed those available at rival ports. In 1986, Portland, Maine instituted a fish exchange and other improvements to encourage greater use of its port by fishermen. While declining landings were seen in the major

Massachusetts ports over the years 1989 through 1993, relatively higher landings occurred at Portland, Maine (NEFMC, 1993).

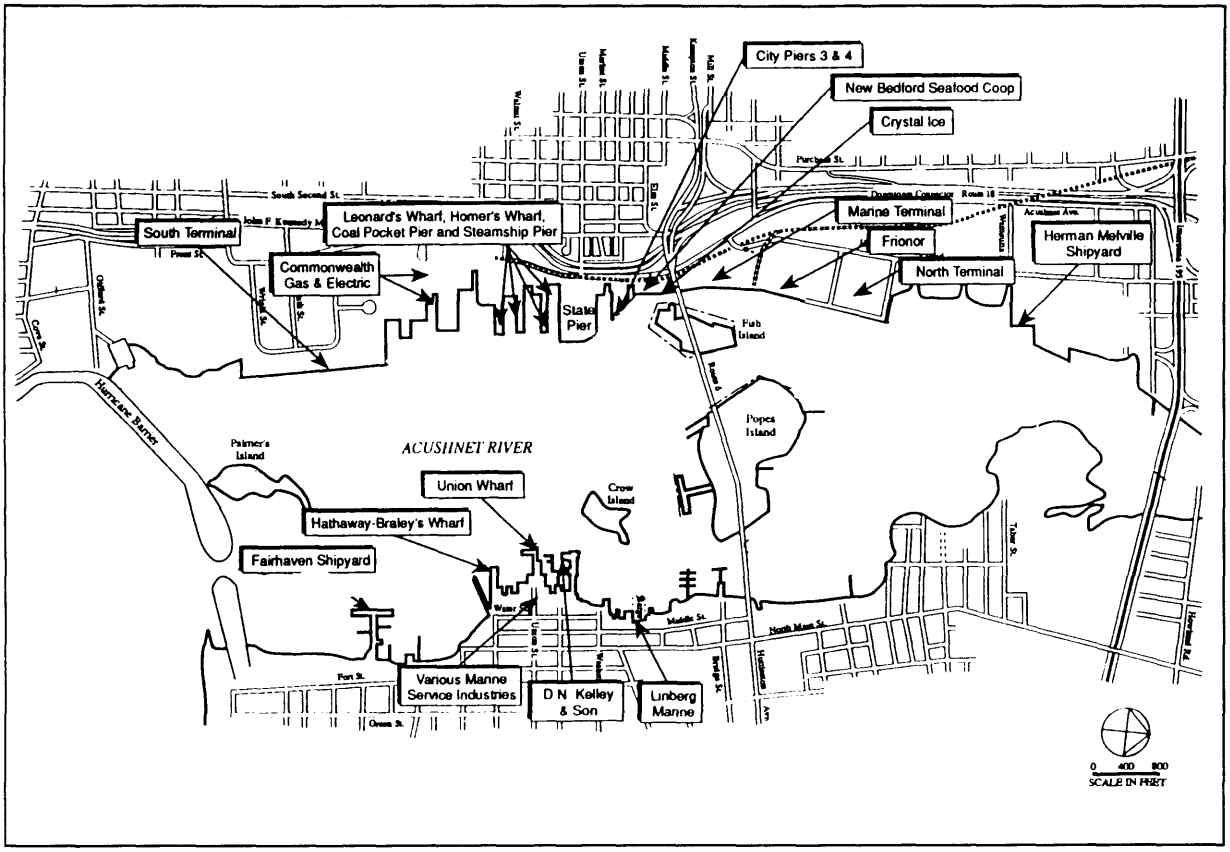
Another force that will continue to challenge the local fishing industry is the high price vessels pay to dock in New Bedford. NEFMC (1993) reported that 300 vessels paid $250 annually to the City of New Bedford for the right to tie-up at the City piers, on a "first come-first serve" basis. Since there is berthing space for 75 vessels, rafting of the vessels is required. Private contractors pay the City $250 annually for a user fee which allows them to service the vessels with one vehicle. Additional vehicle permits cost $50. An additional disincentive to docking in New Bedford is that fishermen are unable to unload cargo onto trucks at the city piers.

Fish Processing

As with traditional fisheries, processing in New Bedford also faces an uncertain future. Even when local fishing stocks are repleted, pressure from large competitors will hamper all but the strongest niche fish processors in the industry. In addition, cost pressures will continue to mount. In the future, USDA quality standards will be applicable to seafood, which will add additional cost and eliminate some supply that might now be marketable (Burch, 1996).

As with commercial fishing, significant changes in the industry will make it essential that fish processors in New Bedford make significant investments to stay competitive. If these improvements are made, the harbor's established large fishing fleet, high-value catch, and plans for improving its transportation infrastructure give it potential to sustain its fish processing industry. Although the local fish processing industry is unlikely to expand, strategic investments in infrastructure can help increase the competitiveness of the Harbor relative to competing ports. Such infrastructure includes more competitively priced berthing space, an automated fish exchange, expanded capabilities in intermodal transportation, and refrigerated warehouse space at competitive prices.

Figure 1-4: Existing Marine Industry Services



HOPEFUL CHANGE FOR THE HARBOR

The difficult economic situation that New Bedford presently faces is not unique. Commercial fishing ports, such as Gloucester, are suffering from depleted fishing stocks, while others, such as Fall River, are facing declines in industry and shipping. Recognizing that the present conditions in the Commonwealth's seaports warrant attention, two important initiatives by the state represent new opportunities for waterfront redevelopment. One of these initiatives is the Seaport Bond Bill for port investments, while the other is regulatory reform that would broaden potential harbor uses to allow for economic cross-benefits. A final opportunity to develop tourism in the community is also discussed as holding significant promise for New Bedford's future.

■ Seaport Bond Bill

The state's interest in port redevelopment developed out of a statewide seaport advisory council initiated in 1993. Called the Governor's Seaport Commission, the coalition of industry leaders and government officials signaled the alarm that Massachusetts' ports will need significant capital investments to remain competitive in the future.

" Our fishing communities are facing a critical loss of fish stocks that could harm the fish processing and trade industries. Conflicts between industrial and other uses in all of the ports may either drive out industry or leave swaths of valuable property unused. Poor landside transportation links to the nation's rail and highway systems will hinder the ports' competitiveness, and failure to dredge key channels can eventually lead to abandonment of Massachusetts ports by important shippers (Governor's Commission on Port Development, 1994)."

The Commission explains that "through planning, investing and acting wisely, we can position Massachusetts' ports to play revitalized, complementary roles in the Commonwealth's economy and be important competitors in the worldwide maritime industry "(1993). Jack Wiggins, Assistant Director of the Urban Harbors Institute at the University of Massachusetts-Boston, said the bond bill, if funded, would re-establish Massachusetts as a viable port by repairing facilities that have been neglected for years. "It is a step that everybody's been waiting for", says Wiggins. "This is an indication that the state is serious about competing with [other] ports such as New York and the mid-Atlantic states" (Wiggins, 1996).

Authorized by the state legislature in February, 1996, and pending appropriations, the Seaport Bond Bill includes funding for a comprehensive set of capital projects. The state's five deepwater ports, Boston, Fall River, Gloucester, New Bedford, and Salem, have been earmarked for most of the funding. The key areas addressed include port access, infrastructure, planning, economic development, dredging, commercial fishing, and maritime industry. The following summary identifies the key investments targeted under the Seaport Bond Bill for New Bedford.

Improved Landside and Waterside Port Access

The Seaport Advisory Council (1994) noted that "an efficient intermodal transportation system promotes the competitiveness of ports." Because Boston is identified as the center for the intermodal network, landside access funds are focused on an $85 million double stack train network to the Port of Boston that will enhance its position as the source for most port cargo activities. Waterside access is addressed through $50 million for dredging navigation channels to improve access by cargo, cruise, and commercial fishing vessels. The $18.75 million earmarked for New Bedford will go towards maintenance dredging the Achushnet River Channel.

Infrastructure

In addition to rail lines, truck routes, and navigation channels, the Seaport Bond Bill recognizes that ports have other special infrastructure needs that are essential to their operation. These includes piers, wharves, bulkheads, and other port facilities. Of the $65 million that would be spent statewide for Public Port facilities, investments proposed in New Bedford include $6 million to improve piers in New Bedford, $500,000 to construct a ferry terminal and $2.25 million for the construction of cold storage facilities for fish processing operations.

Planning

The Seaport Commission emphasized the fact that port development has complex needs requiring sound planning. With maritime industries that differ in their site requirements, economic feasibility, impacts, and level of consistency with local objectives, the Seaport Bond Bill funds would dedicate $5 million towards planning to help ensure successful results.

Commercial Fishing

Funds for commercial fishing are to be used for immediate financial assistance for troubled fishermen, as well as long term modernizations for the industry. Over $20 million will be dedicated towards financial assistance, loans, and loan guarantees for aquaculture, commercial fishing, and seafood processing entities. $2.5 million will go towards research, planning and public infrastructure improvements for these fisheries initiatives.

■ Regulatory Reform

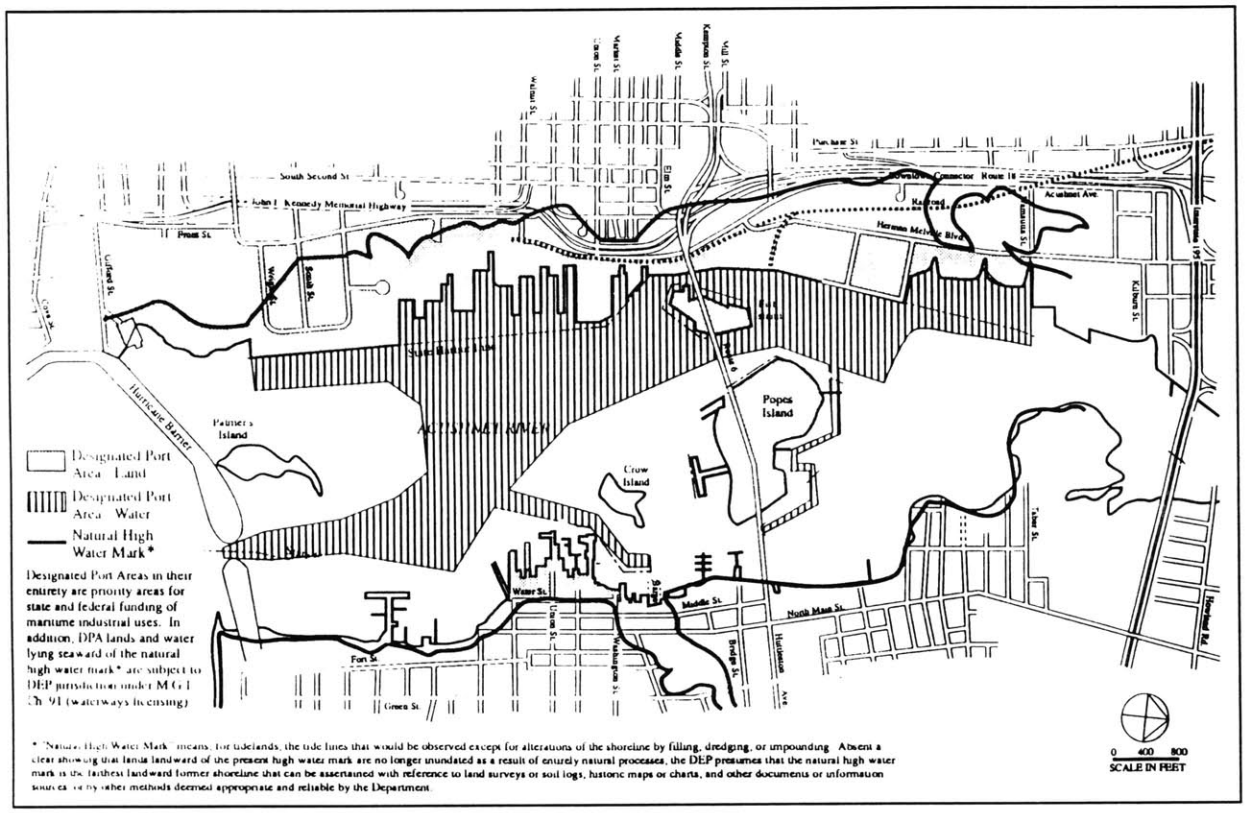
In addition to the capital funding that may become available through the Seaport Bond Bill, reform of important state waterfront regulations can also positively influence the future of New Bedford Harbor. Through broadening the land uses possible, exciting opportunities are now possible for mixing commercial and maritime uses on waterfronts for economic cross-benefits.

Regulations play an important role in waterfront development in Massachusetts because of the state's long and progressive tradition in protecting the shoreline. Under the authority of Coastal Zone Management (CZM) and the Department of Environmental Protection (DEP), the state's two primary tools for regulating the waterfront are Chapter 91 and the DPA Program. The brief summary of the DPA and Chapter 91 are offered below to illustrate their influence on future harbor redevelopment efforts.

Massachusetts Coastal Zone Management (MCZM) -- Designated Port Area (DPA)

One of the most important means by which the state of Massachusetts protects its commercial and industrial waterfront areas is through Designated Port Area (DPA) regulations that have been in place since 1978. The New Bedford-Fairhaven Harbor is one of twelve DPAs in the State. The boundaries are identified in **Figure 1-5**. Both Massachusetts Coastal Zone Management (MCZM) and the Department of Environmental Protection (DEP) play complementary roles regarding DPAs. MCZM approves municipal harbor plans, DPA master plans and changes to DPA boundaries, while DEP enforces the waterways regulations.

Figure 1-5: New Bedford-Fairhaven Harbor DPA Boundaries



The fundamental intention of the DPA Program has been to protect and stimulate the development of marine-related industry. Land use restrictions are placed on activities that do not require access to existing port infrastructure. The intent behind this goal is to maintain the viability of land along developed ports for water-dependent uses into the future. By encouraging further development of existing ports, this policy maximizes the significant investment already made in port infrastructure and protects undeveloped coastal areas from encroachment. CZM Planning Guidelines require the DPA Master Plan to go beyond regulating uses. The Plan "must include a strategy to guide the ongoing promotion of water-dependent industrial use by appropriate government agencies," including capital improvements and the preservation and enhancement of transportation access to the DPA from both the waterside and the landside. (p. 6, "DPA Fact Sheet No. 1, The Regulatory Framework for Licensing and Planning in a DPA", MCZM, December, 1994).

Although its focus remains the promotion of marine-related industry, the DPA program is responding to the current poor economic climate in many ports with new flexibility in its regulations. The maritime economy in Massachusetts has changed dramatically since the DPA program was initiated in 1978. Once vital ports such as New Bedford and Gloucester are facing significant disinvestment and the deterioration of port infrastructure. Although the DPA restrictions had good intentions, they have created a significant constraint to economic development in many Commonwealth ports.

Recognizing the economic constraint that the DPA restrictions have placed on ports in the Commonwealth, regulatory reform has been offered as a means to re-envision the future of the ports. Today, the five general categories of projects that can be licensed by the Massachusetts Department of Environmental Protection (DEP) within a DPA are (1) projects involving water-dependent industrial uses only, (2) projects involving a marine industrial park, (3) projects involving temporary industrial or transportation uses, (4) projects involving industrial and commercial uses that provide economic or operational support to DPA activity, and (5) projects that involve public access facilities (source: "DPA Fact Sheet No. 1"). There are, however, some restrictions placed on these projects. In marine industrial parks, water-dependent industrial uses must be given top priority but nonwater-dependent industrial or commercial tenants may be included in order to provide economic support to the project, provided they occupy no more than one-third of the project area.

The key DPA reform of 1994 is allowing other types of industrial and commercial uses that are able to provide economic or operational support to marine-dependent industries. These "complementary" uses may now occupy up to 25% of a project site, or potentially a higher site coverage if it is authorized by the community's DPA Master Plan. The potential impact is significant because now up to 25% of the entire DPA can be programmed for supporting commercial uses by the DPA Master Plan. Additional regulatory reform is reflected in the new flexibility of the DPA Master Plan to specify which industrial and commercial uses will qualify as a Supporting DPA Use. However, the Master Plan must specify limits on the development of

commercial uses such that the marine industrial character of the DPA is not lost. Areas that do not maintain this character are not possible for de-designation. The possibility to modify DPA boundaries are subject to the suitability criteria specified in 301 CMR 25.00: Designation of Port Areas (EOEA). These criteria are based on an area's suitability to accommodate water-dependent industrial uses.

Despite the wide range of commercial waterfront uses now possible, the regulations still explicitly prohibit residential, hotel, and recreational boating uses everywhere in the DPA, since "the inherent nature of the use gives rise to severe conflict with port operations or excessive consumption of port space, either directly or indirectly (e.g. as a result of collateral development activity)."

Most of the waterfront on the New Bedford side of the Harbor and a relatively small industrial area in Fairhaven fall within the DPA boundaries, as shown in **Figure 1-5.** All proposed development within these boundaries will continue to adhere to the DPA regulations. However, the recent DPA reforms will now allow for a potentially more creative mix of waterfront uses. Maritime industry can now be supported by new uses as long as these uses can prove they are "supportive of water-dependent industrial uses" by offering vital economic cross-benefits.

Department of Environmental Protection (DEP) -- Chapter 91

The other key regulation influencing harbor redevelopment is Chapter 91. Although DPA regulatory reform is the key to introducing new uses to the New Bedford waterfront, a brief description of the related impact of Chapter 91 is important because it complements the DPA in New Bedford Harbor.

The Massachusetts Public Waterfront Act, Chapter 91, is the oldest waterways licensing act in the country, having been enacted by the Massachusetts State Legislature in 1866. The Act was updated in the 1980's and remains under the authority of DEP.

Chapter 91 recognizes public rights within all flowed and filled tidelands. To protect these rights, the regulations were established to "protect and promote tidelands for water-dependent uses" and to "provide greater control over private development of

waterways and filled tidelands to ensure that appropriate area are available for public use and enjoyment" (p. 5, Coastal Brief, MCZM/EOEA, "Chapter 91: An Introduction to the Massachusetts Public Waterfront Act"). The regulations specify land use constraints and require state authorization for the alteration or construction of structures, placement or alteration of fill, dredging, or change in use within tidelands.

Boundaries of filled areas in which Chapter 91 regulations apply are based upon the historic high water mark, which is the shoreline as it existed prior to public alteration. In filled tidelands outside of DPAs, jurisdiction is limited to the first public way or 250 feet from the present mean high water line, whichever is further landward. Within DPAs, all filled areas are regulated, regardless of the distance from the present mean high water line or the existence of a public way. (p. 6, Coastal Brief) The boundaries of Chapter 91 in the harbor are identified as the Natural High Water Mark in **Figure 1-5**.

Despite the new opportunities possible from DPA reform, the lengthy licensing procedure for Chapter 91 will likely remain a challenge for harbor redevelopment efforts. The Chapter 91 licensing procedure for water-dependent uses involves filing an application for preliminary review, determination of water dependency by the Waterways Regulation Program, public notice of the application, completion of the file, reaching a decision on the license, issuing the license, recording the license, and a certificate of compliance upon completion of the project. A license may also be filed for a nonwater-dependent use. A license will only be granted if the project serves a proper public purpose that "provides a greater public benefit than public detriment to the rights of the public in tidelands." (p. 20, Coastal Brief) The licensing procedure is more involved than the procedure for water-dependent uses, and includes the additional steps of a pre-application meeting, a MEPA filing, a public hearing, written determination, and an appeal period.

Since a significant portion of the New Bedford-Fairhaven Harbor is also within the DPA, the Harbor falls under special provisions in Chapter 91. Most importantly is the fact that Chapter 91 regulations promote a water-dependent industrial use in

DPAs, rather than simply a water-dependent use. Because of this, taking advantage of DPA reform to introduce commercial, non-industrial, uses into the harbor will require strong evidence of conformance and appropriateness to maritime industrial uses. The strongest opportunities will likely be mixed-use projects that integrate maritime industry and commercial activity in a creative way to offer economic cross benefits.

■ Tourism Development

Along with state regulatory reform and capital funding, tourism has the potential to be a major catalyst for future growth and development in New Bedford. Tourists seeking a destination with a genuine and active sense of place can be drawn to the resources of New Bedford if coordinated planning and development occur.

Already, New Bedford has the resources to attract more visitors. The community's rich history as a whaling and fishing port is reflected in attractions throughout the Urban Waterfront and adjacent Waterfront Historic District. Key attractions include the Whaling Museum, the Seamen's Bethel, the Zeitorion Theatre, the Rotch-Jones-Duff House and Garden Museum, the Black Heritage Trail, the Fire Museum, the Schooner Ernestina. Planned projects including the national park, aquarium, ArtWorks!, and the Steamship Nobska will add to this density of attractions.

Tourism is increasing now

Already, New Bedford is seeing the signs of an expanding tourism industry. In 1995, there was an increase of 20% over 1994 in the number of tourists coming into the visitors centers (Camara, 1996). The Whaling Museum has long been the largest tourism draw and has also experienced similar increases in visitation. In 1995, attendance at the Whaling Museum exceeded 50,000 visitors, and included people from around the world.

Founded in 1903, the Whaling Museum is the largest repository in the world of objects and documentary evidence relating to the history of the whaling industry. Director Ann Brengle explains that the museum's mission is "to educate and interest

all of the public in the history of American whaling, in the history of Old Dartmouth and adjacent communities, and in regional maritime activities." In order to maintain it's key role in the community's tourism industry, a long range plan for the Museum has been established and includes exhibit, educational, and external affairs objectives (Brengle, 1996).

Benefits to the Community

As with other development inititatives, tourism opportunities in New Bedford are occuring at a time when many individuals in the industry are concerned with improving facilities and expanding amenities so that they can reach therir full potential. Unfortunately, a collective vision of tourism in the city has not yet been realized. Although individual initiatives, will likely attract more visitors, efforts will need to be coordinated into a broader regional strategy. By taking advantage of a number of cooperative initiatives with the Bristol County Convention and Visitors Bureau and the State Office of Travel and Tourism, tourism development in New Bedford can reach hundreds of thousands of new potential visitors as regional tourism draws are created in New Bedford. Chapter Four explains in detail the important current regional initiatives that include intermodal transportation improvements, a casino and the Whaling National Park.

At the local level, it will be important that community leaders step forward as partners with business, city, state and federal government redevelopment interests. A key role for a coordinated tourism strategy will be promoting the benefits that tourism offers the greater community. As the community works toward redeveloping the waterfront, leaders should not overlook the potential contribution of tourism to the traditional maritime economy. Today, more than ever, New Bedford's commercial fishing and processing industry needs broad support as it goes through this period of adjustment. It also needs to promote new products to new customers. Clearly, it would be good public relations for the maritime community to share its story with the broadest possible public.

In addition to the positive image of New Bedford that can be fostered through tourism-related development, it is also important that community leaders promote

the benefits that tourism can have on economic development efforts in the community. Although the proposed casino represents a large number of jobs, smaller scale operations also have large potential for job growth and are not capital intensive. Ed Camara, Tourism Director for the City, points out that tourism is a labor intensive industry that creates more jobs with a much smaller investment that in any other industry. Camara believes that the industry currently employs the people that need jobs the most in New Bedford: 55% women, and 30% young people (Camara, 1995).

As an industry of small businesses, tourism related industries are dependent upon individual initiative. Nationally, 99% of the 1.4 million tourist-related companies are classified as small businesses (Smith Travel Research, 1994). Since the industry depends on the initiative of entrepreneurs, success in New Bedford is going to depend on helping individuals develop effective business plans and linkages to management support. The City's Community Development Director, Tourism Coordinator, and business development organizations, such as the New Bedford Corporation, should step forward to help entrepreneours with these needs.

A related benefit of increasing tourism is that the resources of the historic district can be protected. Presently, the Waterfront Historic District, and adjacent downtown areas are facing an increasing number of empty stores because traditional retail businesses are struggling to compete with big box retailing that have expanded rapidly in the last few years in Fairhaven and Dartmouth.. In order to reverse this trend, the quaint atmosphere of historic architecture, old streetlamps and bricked streets should be used to create an environment that can attract tourism-related retail businesses. Tourism related shops, such as bookstores and gift shops, have the advantage of being a distinctly different type of retail that can attract new tenants to the City's downtown area and service the activity generated by the national park and waterfront attractions.

Along with developing attractions, increasing tourism along the waterfront should focus on interpretation of maritime industries. Especially in active working

waterfronts such as New Bedford, there is the potential to open up marine activites, such as cargo handling and commercial fishing operations, that still persist and will capture the attention of inquisitive visitors. Fish auctions and fish-handling halls, Coast Guard vessel moorage, research and survey vessels, tug dispatch stations, recreational boat moorage, historic vessels, yacht clubs, and harbor tour docks are among the authentic, contemporary maritime uses that might be courted to coexist with waterfront industries. With the casino and national park initiatives nearby, the waterfront could undoubtedly become a significant destination for visitors.

CONCLUSIONS

As a counterpoint to the economic challenges currently facing the New Bedford-Fairhaven Harbor are future opportunities to facilitate redevelopment. The opportunities now possible through Seaport Bond Bill funding, DPA regulatory reform and increased tourism offer promise for successful harbor redevelopment.

These "agents of change" offer significant opportunities to expand the contribution of the New Bedford/Fairhaven Harbor to the local and regional economy through capital funding for necessary infrastructure, and regulatory reform that encourages new uses for economic cross-benefits. Although these new initiatives offer promise for the future, the challenge will be to realize these opportunities through coordinated planning, effective management and successful marketing of community investments.

The current crisis in traditional harbor industries means that a reliance on only a few economic sectors will not provide the long term diversification needed to sustain economic health in the harbor area or in the greater community. Support and expansion of existing uses must be matched with development of new economic activities to assure long term economic health. While Seaport Bond Bill funding and DPA reform are catalysts for change, what is missing is a comprehensive plan for future economic diversity and a coordinated strategy for implementation of the plan. The next chapter reveals the significant challenge of planning for the New Bedford-Fairhaven Harbor in the past, and the key issues that lie ahead in creating a redevelopment strategy.

2 THE CHALLENGE OF PLANNING FOR NEW BEDFORD HARBOR

Strategies for the redevelopment of the New Bedford Harbor must consider the failed attempts in the past, and the key issues for the present. As demonstrated in Chapter One, the economy of the harbor is currently facing a crisis as traditional harbor industries decline. The future will remain bleak unless New Bedford moves beyond its dependency on only traditional maritime industries.

Through analyzing the history of development and planning for New Bedford's waterfront, this chapter explains the history of short-sighted planning for New Bedford's waterfront and identifies the key issues ahead for realizing a vital mixed-use redevelopment effort.

- The first section of the chapter summarizes New Bedford's boom and bust cycles of early development as the community moves from whaling to textiles to fishing.

- The second section discusses New Bedford's post-World War II planning as the community struggles with disinvestment and short-sighted redevelopment efforts. These efforts are discussed under the successive movements of urban renewal, historic preservation and environmental protection.

- The third section identifies the key challenges today towards realizing harbor redevelopment. Land use conflicts, environmental disputes, poor communication between interest groups and regulatory confusion are all issues that must be confronted if New Bedford's harbor is to become prosperous again.

NEW BEDFORD'S WATERFRONT: A HISTORY OF REINVENTING ITSELF

The New Bedford/Fairhaven Waterfront has a history of adapting to change. In a period of over 200 years, the Harbor has moved from being the world's greatest whaling port in the nineteenth century to the nation's foremost producer of fine cotton goods at the beginning of the twentieth century, to its recent role as one of the nation's most productive fishing ports.

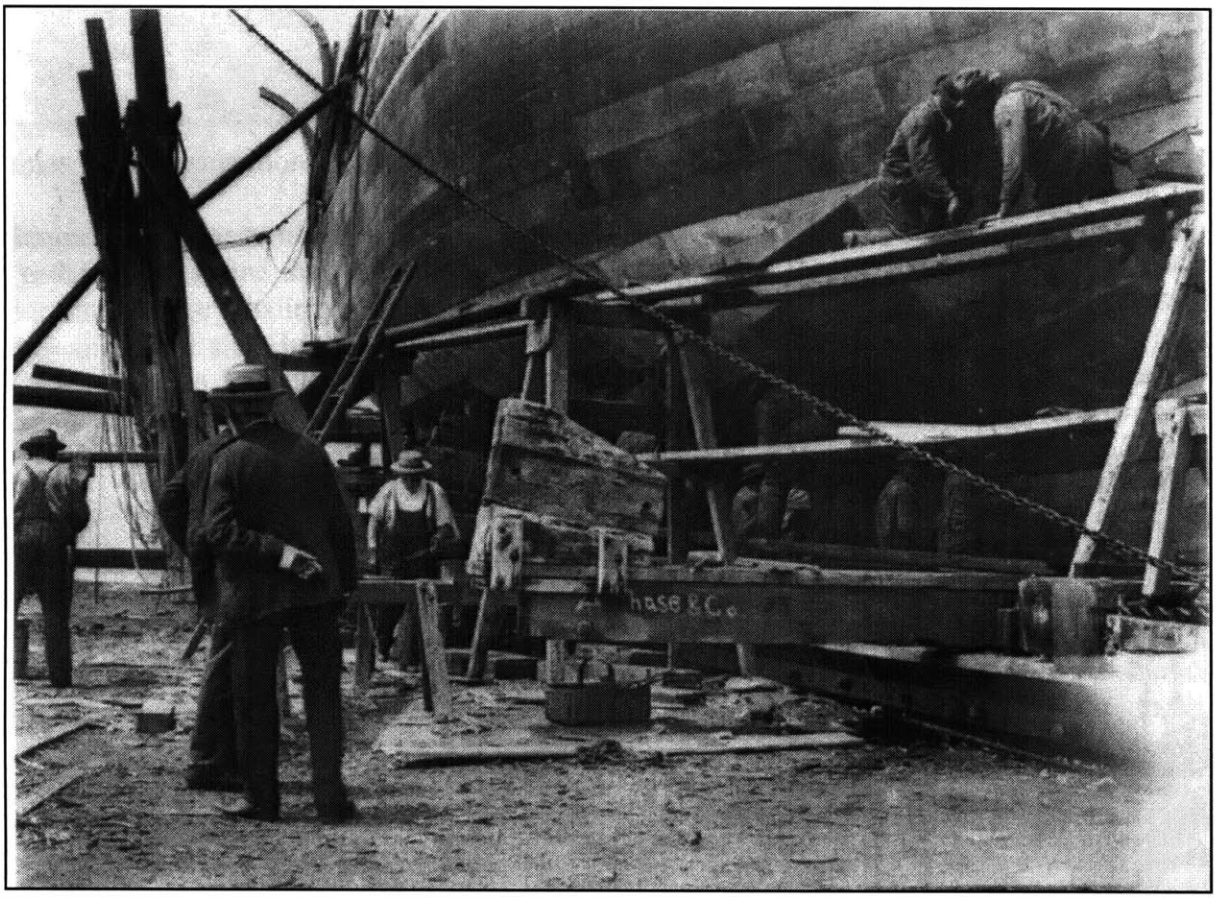
Figure 2-1: New Bedford's Waterfront, circa 1890

■ Boom and Bust: Early Development of New Bedford Harbor

The settlement of New Bedford began over 200 years ago, when a group of thirty-six settlers, among them familiar names like John Alden, Miles Standish and William Bradford, bought from the Indian Chief Massasoit and his son Wamsutta a parcel of land which would ultimately become New Bedford and the adjacent towns of

Acushnet, Fairhaven, Dartmouth, and Westport. For the first one hundred years, New Bedford grew along with other New England seaports, such as Plymouth and Boston, as a shipping port for inland commerce (Clayton and Whitley, 1986).

Figure 2-2: Sunbeam, a New Bedford Whaling Ship



After decades of steady growth, it was the whaling trade that brought fame and fortune to New Bedford, beginning with the arrival of Joseph Rotch in 1765. An experienced and innovative whaling merchant, Rotch left his native Nantucket for New Bedford, attracted by the greater size and depth of the Harbor (Brangle, 1996). Through equipping larger vessels with innovative tools and storage, Rotch initiated whaling voyages that encompassed years rather than mere weeks. Despite the interruption of the Revolutionary War, the whaling trade quickly established New Bedford as the home port. By 1830, the city had surpassed Nantucket, and by 1857, New Bedford had become the whaling capital of the world with a fleet of 329 ships

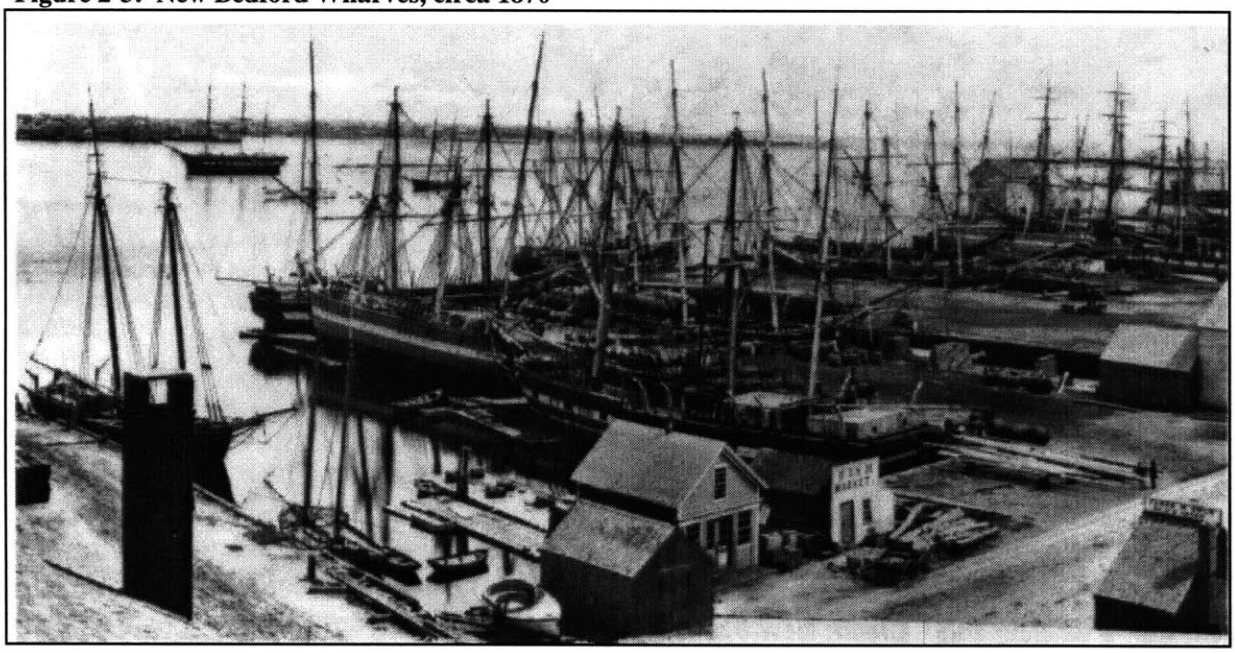
and a work force of over 10,000 men. At this time, New Bedford was among the richest cities, per capita, in the world (Clayton and Whitley, 1986).

Despite warnings of whaling's eventual decline, New Bedford was not prepared for the failing of the industry in the mid-1800s from overfishing and the discovery of petroleum. As the country moved from whale oil to petroleum products for lamp illumination and lubricating machinery, New Bedford temporarily turned away from the sea. Fortunately, the city's damp ocean climate was ideal for making cotton fabrics, and a ready-made port existed for shipping. Building upon the early textile producers such as the Wamsutta Mills, New Bedford's economy moved into the production of fine cotton products (Souza, 1996). By the late 1800s, New Bedford had become the largest producer of fine cotton cloth in the nation.

The textile boom continued into the 1900s, only to meet economic disaster following World War I. Poor management, declining quality and labor problems combined to place the local industry at a competitive disadvantage with the newer Southern mills and imported products. By the end of the Great Depression, few New Bedford mills remained.

A repeating pattern occurred as the city reinvented itself, yet again. The fishing industry had been slowly growing since the early 1890s. More and more commercial fishermen had been discovering the Port of New Bedford's unique advantages: its harbor and its proximity to the rich fishing grounds of Nantucket Shoals and George's Bank. The catch in those early days was mostly groundfish, cod, haddock, and flounder -- but by the 1920s and 30s, a few innovative fishermen had begun to see the potential in scallops, a product that would later become one of the mainstays of New Bedford's catch. By the time of the Great Depression, the fishing industry had become the foundation of the harbor economy, with only the empty warehouses to remind residents of the old textile trade (Clayton and Whitley, 1986).

Figure 2-3: New Bedford Wharves, circa 1870



■ A Lack of Vision: Misguided Harbor Redevelopment Efforts

New Bedford found its working waterfront to be blighted after World War II. A lack of planning and infrastructure investment in the waterfront increasingly constrained its still vital fishing industry. The infrastructure of finger piers and shallow drafts left many businesses struggling to stay competitive with more modern port facilities elsewhere. Increasingly an eyesore and a symbol of economic decline, New Bedford and many other New England communities turned their backs on the waterfront.

The first real signs of interest in waterfront revitalization occurred in New Bedford in the 1950's. The rapidly expanding American economy led to increased government resources for redevelopment efforts. Old historic waterfronts in New England were a significant focus for this new attention. In addition to redevelopment efforts under the guise of urban renewal, other factors that led to a renewed interest in the city's working waterfront were the preservation movement and environmental protection concerns. Individually, these efforts returned attention to the waterfront. Unfortunately, for New Bedford, a history of ad-hoc planning caught up with the community. Despite the initiative of local citizens and sizable public funds for redevelopment, waterfront redevelopment efforts were not

coordinated effectively to create a strong, sustainable port. Key projects realized under the direction of urban renewal, preservation, or environmental protection had limited impact. Lacking a vision for the harbor, previous redevelopment efforts have improved only limited aspects of the harbor economy and environment, while simultaneously compromising other community goals.

Figure 2-4: 1960s Urban Renewal in New Bedford

Urban Renewal

Federal urban renewal efforts in the 1950s to 1970s supported ambitious redevelopment plans in port cities throughout the United States. In smaller New England seaports, improvements were largely targeted at downtown revitalization and improving port access and dockage. Progressive harbor planning was discouraged during this time (Herschman, 1988). This is evident in planning for Gloucester's waterfront in the 1950's. The community's Inner Harbor had become obsolete, badly blighted, and an embarrassing symbol of economic decline after

World War II. The city made a major decision to reclaim this unique potential asset and, using available federal funds as well as state and local resources, undertook redevelopment of a strategic section of its Inner Harbor close to downtown. The urban renewal plan, prepared in 1962, provided not only for new, modern dockage, streets, and commercial development opportunities, but also attempted to provide public access along a commercial fishing working waterfront to enable the public enjoyment of its unique scenic and historic appeal. Unfortunately, the progressive mixed-use commercial uses along the waterfront and public access aspects of the plan were compromised and a more conventional redevelopment of the Inner Harbor occurred (Garland, 1990).

In New Bedford, the Redevelopment Authority played a key role in developing contemporary port facilities as part of its "modernization" mission of the city's urban core. The North and South Terminal Projects were planned to support marine-dependent industries. Although the efforts succeeded in meeting the needs of a modern maritime industry, the connection between the downtown and waterfront was poorly considered. Historic waterfront structures were demolished and replaced by large, metal shed storage buildings. In the South Terminal, historic finger piers and wharves were replaced with a 1,665 foot long bulkhead to open up 19 acres of new waterfront land (HDC, 1996).

With the guiding mission of "preparing New Bedford for the future," the Redevelopment Authority also led the construction of the limited access Route 18 Highway to service these facilities. Unfortunately, the highway was not coordinated with historic conservation efforts in the downtown. The connection of the city to the waterfront was destroyed by the new highway that left a collection of disconnected commercial structures, such as the Wharfinger Building. Adjacent to the waterfront, the Redevelopment Authority also initiated a renewal plan for the downtown. Blocks of historic structures were torn down for parking lots and a classically ill-conceived pedestrian mall was constructed on the main commercial street.

Figure 2-5: Demolished Blocks for Route 18

Historic Preservation

In addition to the increase in publicly sponsored redevelopment, a growing appreciation for historic preservation in the 1960's fueled waterfront redevelopment interests. Together with the environmental movement, an interest in historic preservation became a national trend and prompted legislation that became the tools for action. The National Historic Preservation Act that was passed in 1966 was followed by the passage of legislation in the 1970's that provided major tax credits for the rehabilitation of commercial buildings. The tax credit immediately altered the business equation for developers and no longer made it more economical to destroy buildings than build new ones (Wrenn, 1983).

New England waterfronts were among the best examples of the influence of the preservation movement on the working waterfront. The Old Port Exchange in downtown Portland, Maine, and Boston's famous Quincy Market were early

examples of dynamic commercial attractions created from old buildings near the waterfront (Wrenn, 1983).

Figure 2-6: Historic District Streetscape

In New Bedford, a local historic preservation group, the Waterfront Historic Area League (WHALE), played an important role in planting the seeds for waterfront revitalization. The group was formed in the 1960's in response to the city's urban renewal agency's plans to tear down many deteriorating structures in the area. Recognizing the power of designation, a survey of the historic area was completed in 1963 and three years later the area was approved by the Department of the Interior for inclusion on the National Register of Historic Places (Breen, 1994). After several years of economic stagnation, however, it became obvious that to maintain vitality of the historic district, preservation would have to be combined with a creative redevelopment strategy.

In 1970, WHALE began purchasing property using a revolving fund and soon became the largest landowner in the district. Along with other landowners in the area, such as the Old Dartmouth Historical Society, and Bedford Landing Taxpayers Association, WHALE played a guiding role in the redevelopment of the Waterfront Historic District and can be credited with being the catalyst for the $5 million in public and private investment spent in the historic district during the 1970s (Souza, 1996).

Despite the significant success WHALE achieved in New Bedford, some of their efforts were later compromised, and their broader agenda has not been fully realized because of their inability to successfully join historic preservation efforts with an economic development vision. The construction of Route 18 severed the Waterfront Historical District from the waterfront, compromising the impact of the revitalization. Former Planning Director David Kennedy explains that by the late 1970s and early 1980s, the group became perceived as an elitist and affluent group that just didn't understand the issues concerning the waterfront (1996). By the mid 1980s, the quaint shops in the historic district that were restored under the stewardship of WHALE began to empty as the community economy soured. Although WHALE's presence in the community remains strong, the problems it faced in realizing waterfront revitalization highlights the lack of coordination that has defined harbor planning efforts for decades.

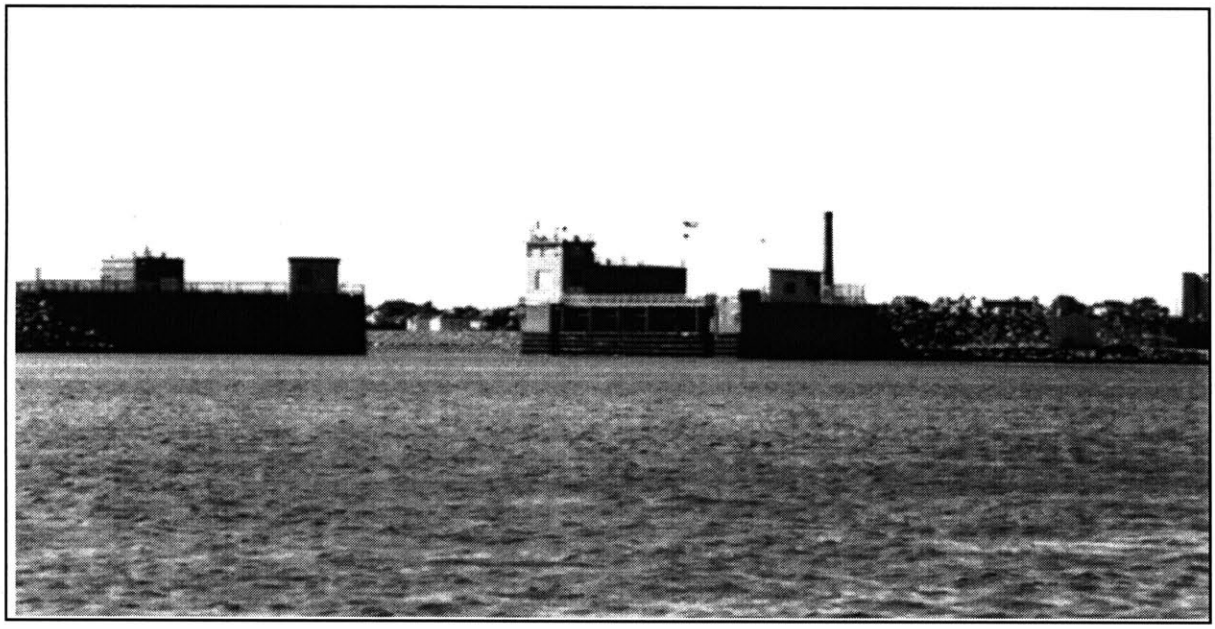
Environmental Protection

The environmental movement in New Bedford was, until recently, not a local initiative. Statewide attention that began in the 1970s had little local support because many of the policies and efforts ran contrary to community feelings of home rule and the economic independence of the fishing industry. The result of environmental protection efforts is that they have helped to remediate the damaged ecosystem in the area, while possibly hurting economic development through limiting opportunities.

The lack of environmental planning and concern in the Harbor area is evident through decades of environmental degradation that occurred along New Bedford's

old, industrial waterfronts. As the community followed the typical pattern of expansion and industrialization, the quality of the environment was affected. Pollution controls were unheard of and more often than not the pollutants and waste generated by shipping and commercial fishing operations were pumped or discarded directly into the sea. Industrial operations, such as Revere Copper, poured highly toxic chemicals directly in the waterways. Additionally, industrial development on the waterfront increased storm runoff, accelerating erosion and sedimentation. This also created additional flooding and drainage problems. Until modern sanitary systems were developed, many thriving inland waterways in New England, such as New Bedford's Acushnet River were literally open sewers (Buzzards Bay, 1991).

Figure 2-7: Hurricane Barrier



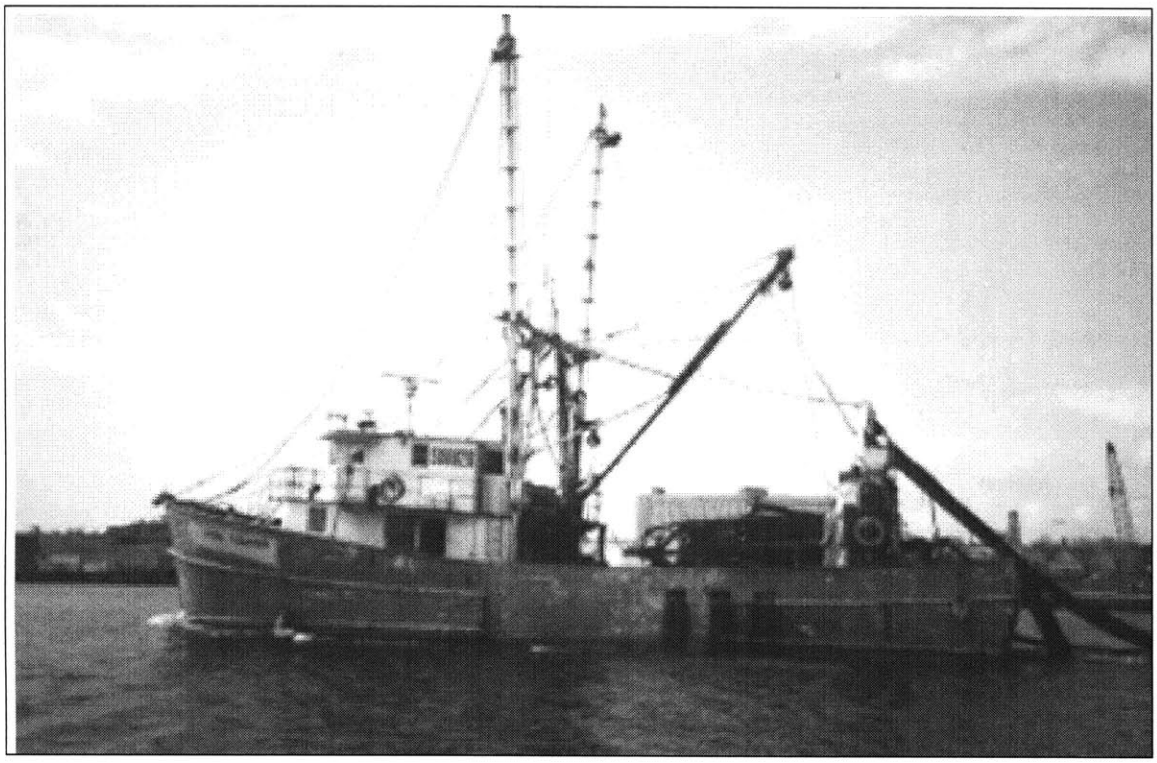
Since environmental considerations were often not coordinated with other actions, conditions continued to deteriorate in New Bedford's harbor throughout the 1960's. Often actions emphasizing economic development worsened environmental problems. In New Bedford, another classic illustration of the community's poor coordination of planning efforts was the construction of the Hurricane Barrier. Constructed in 1966 to protect the Harbor from storm damage and flooding, the design did not consider the environmental consequences. The trade-off for storm protection was that the design of the Barrier reduced tidal flushing in the harbor that

had been helping to dilute and flush out an increasingly high level of pollutants (Fontaine, 1996).

By the time environmental initiatives in the 1970's began to bring forms of federal help to relieve environmental degradation, old waterfronts such as New Bedford were already facing serious problems. The most important of the environmental initiatives to the New Bedford area was the Coastal Zone Management Act of 1972 that provided waterfront access planning funds to states, giving full attention to "ecological, cultural, historical, and aesthetic values, as well as the needs for economic development...." Ports and maritime industry were singled out for attention; and through designating urban waterfronts as Geographical Areas of Particular Concern, states such as Massachusetts began to focus resources on planning for their redevelopment (Herschman, 1988). Through Chapter 91 and the Designated Port Area regulations, Massachusetts quickly became one of the most progressive states in environmental protection. Unfortunately, communities such as New Bedford were facing economic declines and the new regulations and state support was perceived negatively.

Declining industrial use of the waterfront in communities in New Bedford led to the deterioration of landside facilities and ships. Environmental activism in the community stayed low as people remained focused on re-establishing economic vitality. The first group to lobby for environmental interests in the area has been the Coalition for Buzzards Bay, which was established in 1987. As a private, non-profit organization, the group is dedicated to the protection and restoration of Buzzards Bay and its 432 square mile watershed. The Coalition works toward educating residents and advocating for environmental efforts (Fontaine, 1996). Despite the decades of environmental degradation, the Coalition has made significant progress towards raising community awareness of environmental issues and in the current debate over CDF sitings, the group has played a leading role in finding middle ground between conflicting interests.

Figure 2-8: Commercial Fishermen Face an Uncertain Future in New Bedford



CURRENT CHALLENGES

In the past, New Bedford was fortunate to have unique natural resource and locational advantages to draw upon. As the physical environment continues to worsen and the economic climate for many traditional harbor-related industries declines, the harbor is at a crossroads. The compromised redevelopment efforts in the past under the guise of urban renewal, historic preservation, and environmental protection reveal the challenge in planning for the future of New Bedford Harbor. Despite the active interest and involvement of many agencies and interest groups, a common vision of the future for New Bedford's harbor has been elusive for decades.

Before a vision of the Harbor's future can emerge, several issues must be addressed. The following paragraphs explain these key challenges to harbor redevelopment.

The four most important issues to confront:

- Perceived Land Use Conflicts
- Confusing Regulatory Environment
- Environmental Remediation Disputes
- Poor Communication and Coordination between Interest Groups

■ Perceived Land Use Conflicts

Whaling and textiles were harbor-dependent industries, as is the weakened, yet still-active, fishing industry. New Bedford's waterfront is still primarily industrial, but the current land use pattern around the harbor reflects a mix of uses, including some under-utilized and vacant parcels. Fish processing and packaging plants, docking and cargo-handling facilities, boat storage and repair facilities, the old Commonwealth Electric plant, old mill buildings housing various uses, and even a few non-water-related commercial uses dot the land along the New Bedford side of the harbor. Much of Fairhaven's waterfront is zoned and utilized as residential property, but there is also a concentration of harbor-related industrial uses consisting primarily of facilities for docking, storage and repair of boats.

Over the past several years, changes in the fishing and fish-processing industries have resulted in increased pressure for non-industrial development along the waterfront. The fishing industry has declined substantially, resulting in significant unemployment and under use of the Harbor, while new technologies and markets have reduced the rationale for fish-processing plants to be located along the waterfront. Meanwhile, the Harbor has seen an increase in the number of recreational boating facilities and plans are being considered for the placement of Confined Disposal Facilities (CDFs) required for the environmental cleanup of the Harbor. Increasingly, an important public policy debate centers on the appropriate balance of uses on the waterfront and the degree to which new activities can be accommodated without foreclosing future options for existing industries.

Maritime-related groups feel strongly that a significant portion of the Harbor should remain dedicated for water-dependent industries, particularly fishing, which could rebound as fish stocks are replenished. Increasingly, vocal support from business

leaders has emerged for introducing other commercial activities along the waterfront that could be linked to the proposed National Park and casino. There are also strong voices promoting a maintenance dredging effort and the construction of freight storage facilities in order to accommodate increased cargo ship activity within the Harbor and connecting the Harbor to a regional, even international, intermodal transportation system. Meanwhile, owners of residential property on the Fairhaven side continue to be interested in maintaining the quality and value of their property, and fishing interests want to assure that the waterfront will continue to be able to accommodate their vessels. With the recent reform to Designated Port Area (DPA) regulations, an important challenge is investigating the diverse range of possible land uses around the Harbor, consider the potential benefits of each use, and make appropriate tradeoffs. Resolution of this issue of what the Harbor is to become is essential in order for redevelopment efforts to be successful.

■ Environmental Remediation Disputes

Without the resolution of the current environmental disputes, a new vision for the harbor is of little value. This is a pivotal issue connected physically and perceptually to the future economic health of the area. Years of physical development and unchecked overdrawing of natural resources have resulted in many adverse effects on the natural environment. Depleted fishing stocks, disappearing vegetated areas and wetland wildlife, a polluted river and contaminated backland areas are some of the existing problems.

Environmental concerns have drawn considerable attention over the past several years from both public agencies and private organizations. The strong interest and involvement of members of the community has been impressive. As a result, there are currently a number of proposals in various stages of development. These include restrictions on fishing, federally funded cleanup of PCB's, dredging to deepen the channel, treatment or elimination of sewage discharge, and strict monitoring of oil spills and other forms of contamination.

One of the key current initiatives is the Environmental Protection Agency's planned Superfund cleanup of PCB's and other industrial by-products that contaminate the harbor. Responsibility for the cleanup lies with the District EPA office and the City of New Bedford. Additionally, the New Bedford Harbor Trustees Council is responsible for administering more than $20 million in funds that were set aside for the restoration of natural resources that were harmed by the release of hazardous substances, including PCBs, into the Harbor. The New Bedford Community Forum, a group that includes representatives from the EPA, the Massachusetts Department of Environmental Protection (DEP), the New Bedford City Council, and concerned citizen groups, was formed to address some of the issues concerning the remediation of these environmental problems.

The initial clean-up of the designated hot spots of PCB-contamination was largely completed by the fall of 1995. More than 300 tons of PCB-contaminated sediment were removed and placed in a temporary confined disposal facility (CDF). Although this represents half of the sediment that needs to be removed, the next phases of dredging will deal with remaining sediment in the Inner Harbor, Outer Harbor, and Upper Buzzards Bay.

Permanent storage and disposal of the contaminated sediment continues to pose significant challenges. Although there is now growing consensus on the acceptability of CDFs, local interest groups and the authorities responsible for the remediation efforts are at odds over siting issues. The challenge ahead will be to successfully site the CDF's within the harbor to become opportunity sites that can be integrated into the larger redevelopment scheme.

■ A Confusing Regulatory Environment

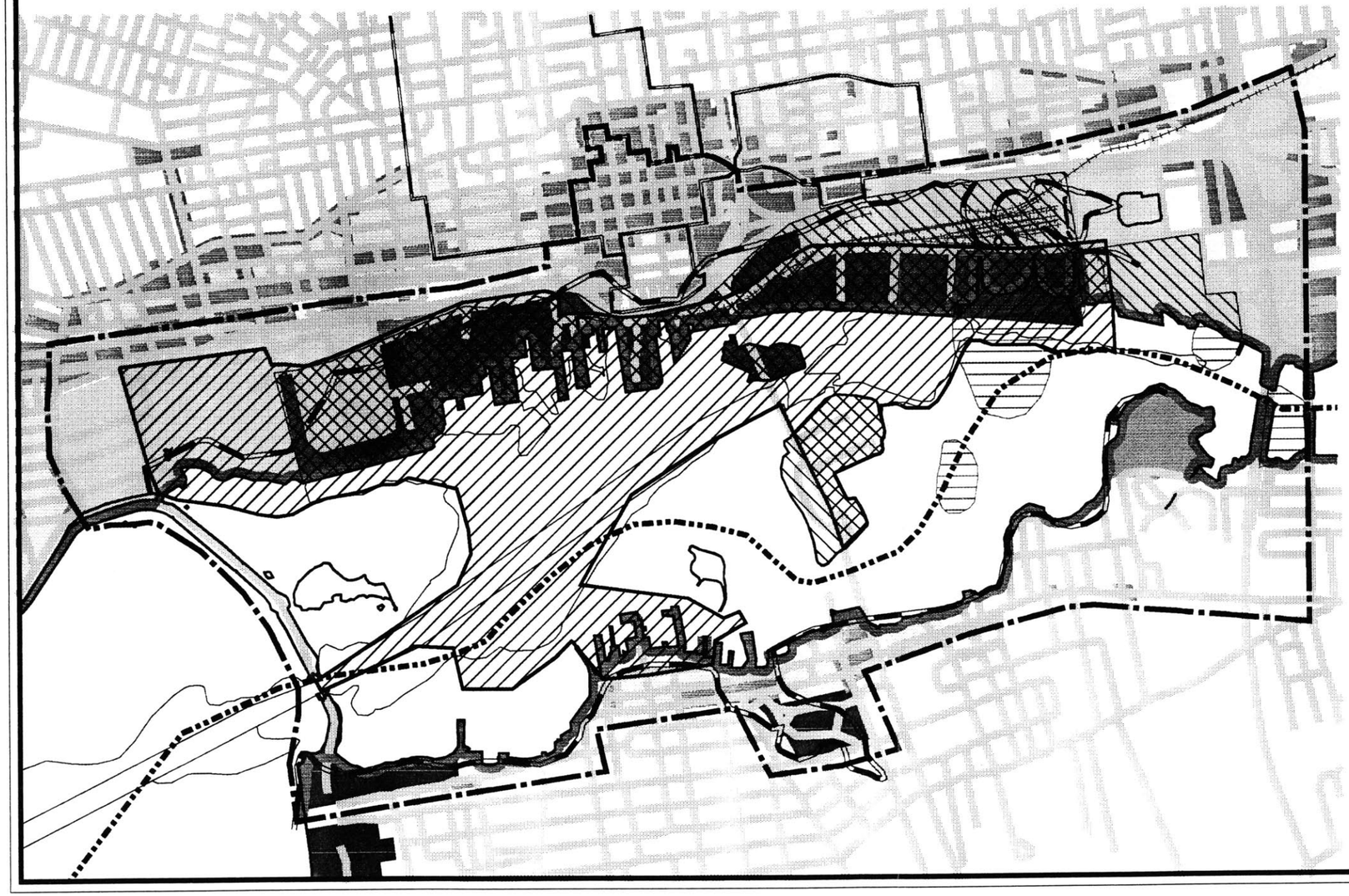
As a large industrial waterfront that spans two municipalities, the New Bedford-Fairhaven Harbor is under many local, state, and federal jurisdictions and is the subject of many regulatory controls, as illustrated in **Figure 2-9**. The intentions of these regulations are mainly to assure that appropriate, high- quality development occurs within the port environment, which is a scarce resource. Water-dependent

industries are encouraged and protected, as are the environmental integrity of the Harbor and public access to the waterfront.

However, the existence of multiple authorities and the large number of regulations that pertain to the planning and development of the harbor creates a confusing environment for the redevelopment process. This confusion results, in part, from the fact that several different regulations are in place that relate to similar issues. Furthermore, in some cases these regulations do not use consistent language to describe their common goals. The complexities are reinforced by the existence of multiple layers of land use jurisdictions and agencies with their own boundaries, some of which are shown in **Figure 2-9**. The boundaries now in effect include:

- Local underlying zoning districts;
- Local Working Waterfront overlay zoning district;
- Local and National Register Historic Districts;
- Designated Port Area;
- Chapter 91 jurisdiction over existing and former tidelands, from historic high water mark;
- Conservation Commission jurisdiction over wetlands, related water resources, and adjoining land areas;
- EPA jurisdiction over contaminated areas and proposed sites for Confined Disposal Facilities for Superfund cleanup.

Figure 2-9
Regulatory Boundaries



LEGEND

- Wetland Protection (100' in from shore and other resource areas-partial jurisdiction shown)
- Designated Port Area
- Superfund Dredging Areas
- Planning Area Boundary
- Municipal Boundary
- Chapter 91 Boundary (Historic Mean High Water)
- Proposed CDF Site Boundary
- National Register Historic Districts
- Residential, Single Family (FH) Residence "A" (NB)
- Residential, Two Family (FH) Residence "B" (NB)
- Residential, Multi-Family (FH) Residence "C" (NB)
- Commercial (FH) Business, Mixed Use (NB)
- Industrial (FH) Industrial "A" (NB)
- Industrial "B" (NB)
- Waterfront Industrial (NB)
- Recreational (FH)
- Agricultural (FH)

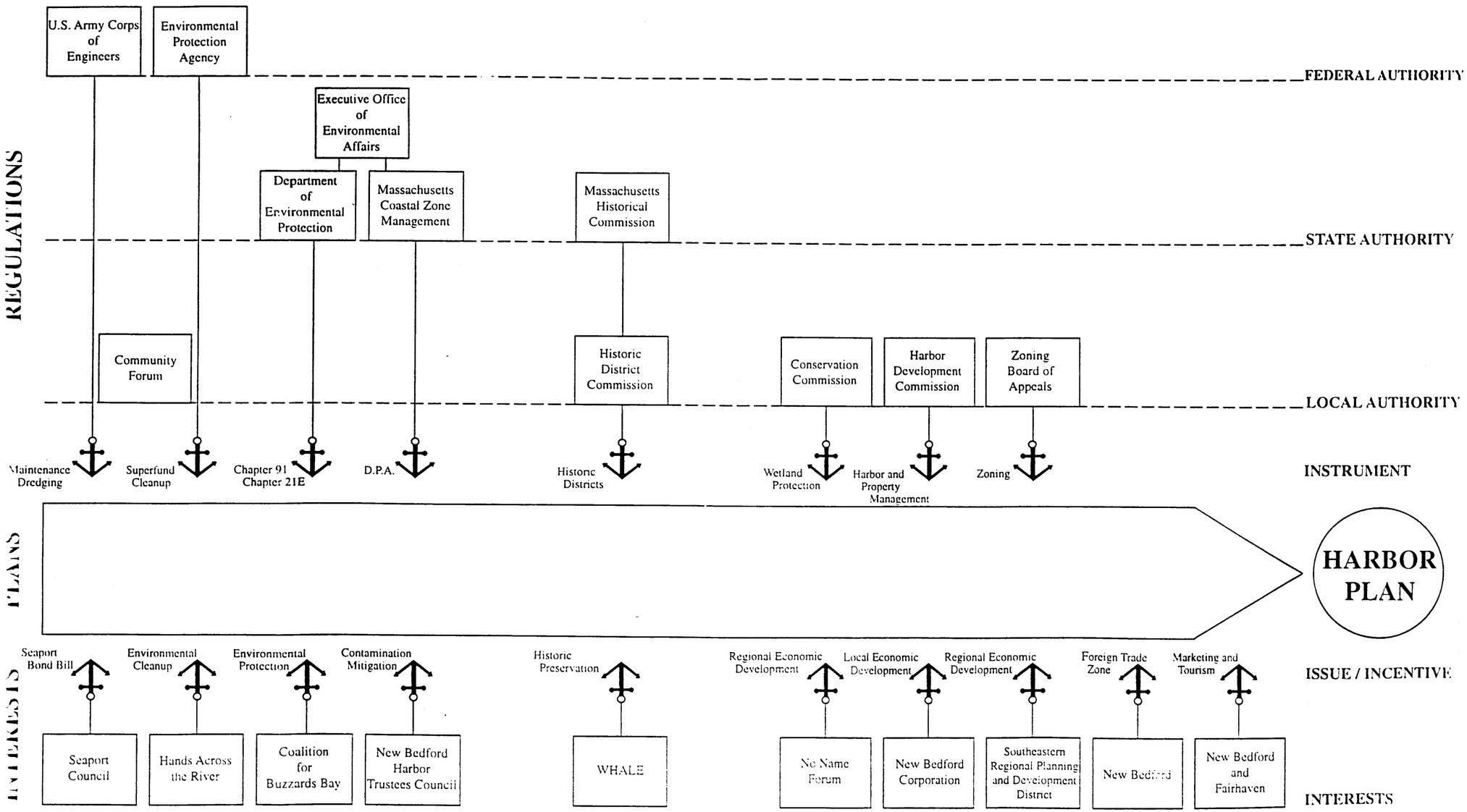
Sources

Buildings and Parcels: City of New Bedford digital data.
Water Depths: NOAA Nautical Chart, 1993 (1:20,000).
Transportation-New Bedford: City of New Bedford digital data.
Transportation-Fairhaven: MassGIS digital data, 1980s (1:100,000).

0 625 1250 1875 2500

SCALE IN FEET

REGULATIONS AND PUBLIC INTERESTS



The scope of the key regulations, Chapter 91 and the DPA, are offered in Chapter 1. While the intent of each regulation may be sound, taken together they represent a formidable barrier to change in the use and configuration of the harbor. For some, the current situation is desirable since it tends to preserve the status quo. On the other hand, redevelopment and future investment in all types of activities, including marine industry, might be facilitated by streamlining and coordinating the regulations and participating agencies into a singular, overall approach to managing growth and change on the harbor. This need not reduce the power of regulations, but could clarify their intent, improving the image of Harbor as a reasonable place to do business.

■ Communication and Coordination Among Interest Groups

Just as there is a myriad of regulations affecting development and use of the Harbor, there are a number of special interest groups concerned, either directly or indirectly, with waterfront issues. In general, the area is very fortunate to have such a high level of public interest and commitment to the Harbor and its environment. Community initiative is evident in groups representing interests ranging from economic development to historic preservation and environmental conservation. **Figure 2-10** illustrates the interactions between regulatory agencies and key interest groups that are most influential in Harbor related matters.

While many of these groups are passionate about their individual causes, there is often a lack of communication and coordination among them. Coupled with multiple jurisdictions and regulatory agencies, the result is that there are now actually several projects underway in the harbor, with little understanding among them and no formal coordination. This problem is compounded by the fact that much of the power and funding for these efforts is non-local. As indicated in **Figure 2-10**, federal and state agencies play a very large role in Harbor management, often pursuing their own independent missions.

Efforts to consolidate planning and interest groups have been made, such as the move to combine environmental and maintenance dredging and disposal work. Also some groups, like the New Bedford Community Forum, have successfully brought

together a range of interests to focus on a specific problem. These can serve as models for further coordination and joint effort.

While some may argue that there are too many groups involved in harbor-related issues, it must be recognized that all groups that want to be heard need to be heard and included if a consensus plan for the Harbor is to be reached. Many of the previous failed efforts at redevelopment identified earlier in this chapter failed because they were not inclusive and comprehensive. An improved redevelopment process will require a clear identification of goals by each group, new lines of communication, and a willingness to work together.

CONCLUSIONS AND DIRECTIONS

The historical challenges in planning New Bedford's harbor still resonate today. The key issues today of balancing land uses, resolving environmental remediation disputes, clarifying the regulatory environment and coordinating efforts between groups have all been problems throughout the history of the harbor. For over 300 years, New Bedford's harbor economy has experienced deep cycles of prosperity and depression. The early history of the New Bedford Harbor underscores the significant natural resources and locational advantages of the Harbor. Although these attributes allowed the community to make a successful transition from successive industries, they will not be enough in the future.

As the New Bedford Harbor faces the future, the lessons from the past must not be forgotten. Dependency on a single industry, ad-hoc planning and the poor coordination of investment efforts have led to misguided redevelopment efforts in New Bedford for over thirty years. Future harbor redevelopment planning in the community must be guided by a vision and clearly articulated strategies for the future that reflect upon the mistakes of the past; only then can the New Bedford-Fairhaven Harbor reinvent itself again and become a thriving port in the next century.

3 CASE STUDY DIRECTIONS FOR THE WORKING WATERFRONT

Regional and national efforts to redevelop working waterfronts offer important insights and directions for the future of the New Bedford-Fairhaven Harbor. This chapter offers four different themes of redevelopment for working waterfronts.

The first section of this chapter analyzes **The Massachusetts Context**. Two distinct redevelopment strategies are studied: the **Working Waterfront** in Gloucester and the **Tourism Waterfront** in Fall River. Gloucester is focusing it's efforts on rebuilding its maritime fishing economy, while Fall River is attempting to create its waterfront as a tourism destination. The key point for New Bedford is that a more balanced mix of uses should be sought. Gloucester's singular focus on maritime industry is leaving portions of the waterfront deteriorated and underutilized, while Fall River is trying to bring tourism to the waterfront without a context of appealing waterfront activity.

The second section of the chapter broadens the perspective to **The National Context** that includes examples of a more sophisticated approach towards working waterfront redevelopment. Seattle's **Integrated Waterfront** is described along with Mystic's **Interpretive Waterfront**. Efforts in Seattle illustrate the idea that balancing both tourism and marine industrial uses can create a sustainable mix of uses that generate economic cross-benefits, while Mystic demonstrates the strong potential of a tourism based strategy that focuses on historic seaport activities.

THE MASSACHUSETTS CONTEXT

State funding for port investments and regulatory reform have opened a new chapter for waterfront redevelopment. As the main contributors of the state's maritime economy, the five deepwater ports of Boston, New Bedford, Fall River, Gloucester and Salem, have the most to gain.

Redevelopment efforts in Gloucester and Fall River are particularly relevant and insightful for comparisons to New Bedford. These communities have similar demographics and are coping with decades of economic disinvestment. As both communities center their redevelopment efforts on their respective State Piers, two very different visions of the waterfront are clear: an improved maritime economy in Gloucester that is distinct from the tourism oriented strategy emerging in Fall River.

Along with offering two different directions for harbor redevelopment, the analysis of Gloucester and Fall River underscores the importance of coordinated port planning in the state. Historically, Gloucester and Fall River have been competitors to New Bedford; in the future they will need to be allies. Although these communities will continue to compete with New Bedford for industries and tourism dollars, it is important that cooperation and coordination is improved. The regionalization of the maritime economy and need for tourism linkages creates the need for Massachusetts' ports to cooperate to stay competitive. Infrastructure networks, coordinated marketing, and information exchange with the other ports in the state represent the only way that these seaports will thrive in the next century.

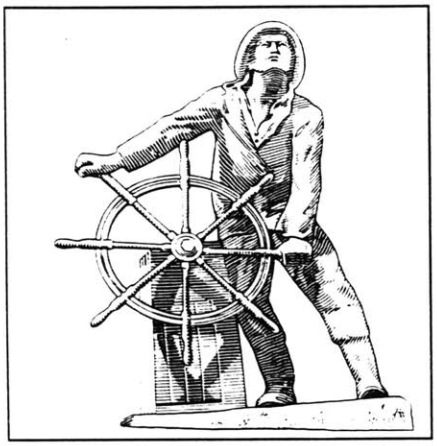
The following analysis of redevelopment efforts illustrates the current initiatives that are shaping Gloucester as the working waterfront and Fall River as the tourism waterfront.

■ Gloucester: The Working Waterfront

Today: A Troubled Economy

This historic port has a long and rich fishing tradition that spans 300 years. Despite the community's attachment to the trade and a series of redevelopment efforts, a period of decline continues in Gloucester because of changing technologies, over-fishing , and international competition from frozen fish vendors. The effects of this decline on Gloucester are clear today in the vacated spaces and crumbling infrastructure of the harbor. Although Gloucester is similar to New Bedford in that the maritime economy is focused on commercial fishing, the severity of the current

Figure 3-1: Fisherman at Wheel



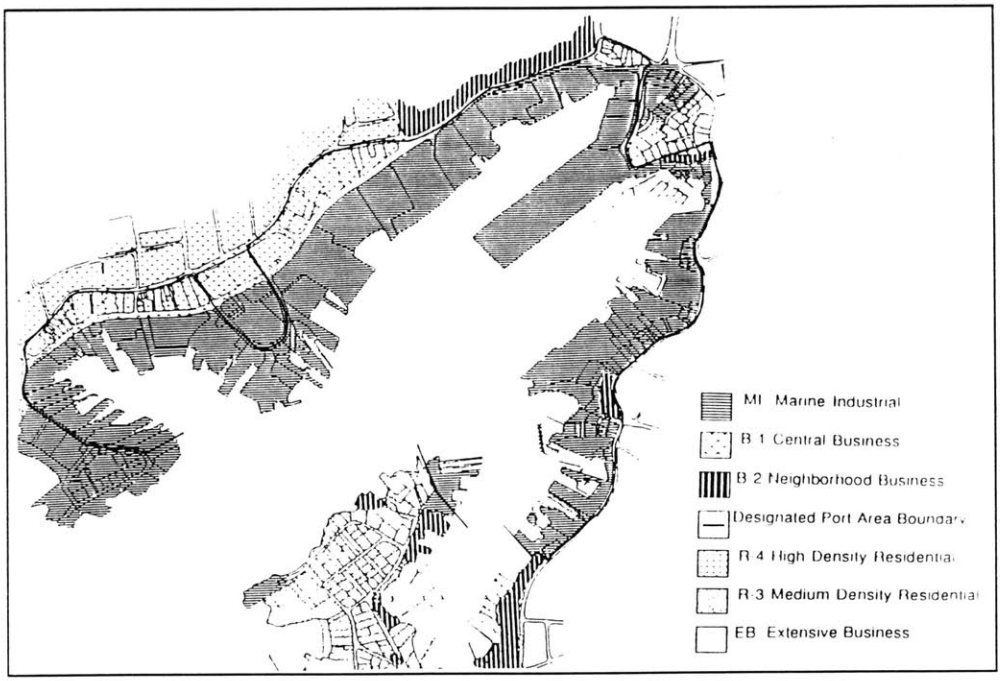
downturn in the industry is more severe because of a dependence on groundfish stocks and the more limited fish processing sector (Seaport Council, 1994).

As economic conditions worsen from fishing restrictions, wholesalers and processors are not optimistic about the future of the Gloucester fishing industry. Vito Calamo, a fisheries expert in the City Planning Department, believes that few, if any, businesses are planning immediate expansions. Instead, he believes that most realize that even if fish stocks rebound in the future, the fishing industry will be transformed by new scales of operation, and demands for new equipment and techniques.

Future: A Re-established Maritime Economy

Recognizing the over-capacity in the harbor and deteriorating infrastructure, community leaders are focusing nearly all redevelopment efforts on rebuilding the

Figure 3-2: Gloucester Inner Harbor Land Uses



maritime economy. "With only a handful of private companies investing in Gloucester's waterfront now, we need to focus our public dollars on a few projects," says Calamo. The former North Shore Coordinator for CZM, Farah Courtney, feels that the limited public funding towards key infrastructure projects is the key to repositioning the fishing industry over the next few years as the fishing industry's troubles reduces the return on private investment.

Determined to maintain the community's tradition as a commercial fishing port, redevelopment efforts in Gloucester have been focused on strategic investments in the State Pier area. Both institutional and market forces are essential re-engineering the waterfront for the future by recognizing that the local fishing industry will require less, but more efficient space. The trend is towards consolidating maritime industry around the recently redeveloped State Pier, with little attention to older facilities in the traditional fishing operations center in the Fort Point area.

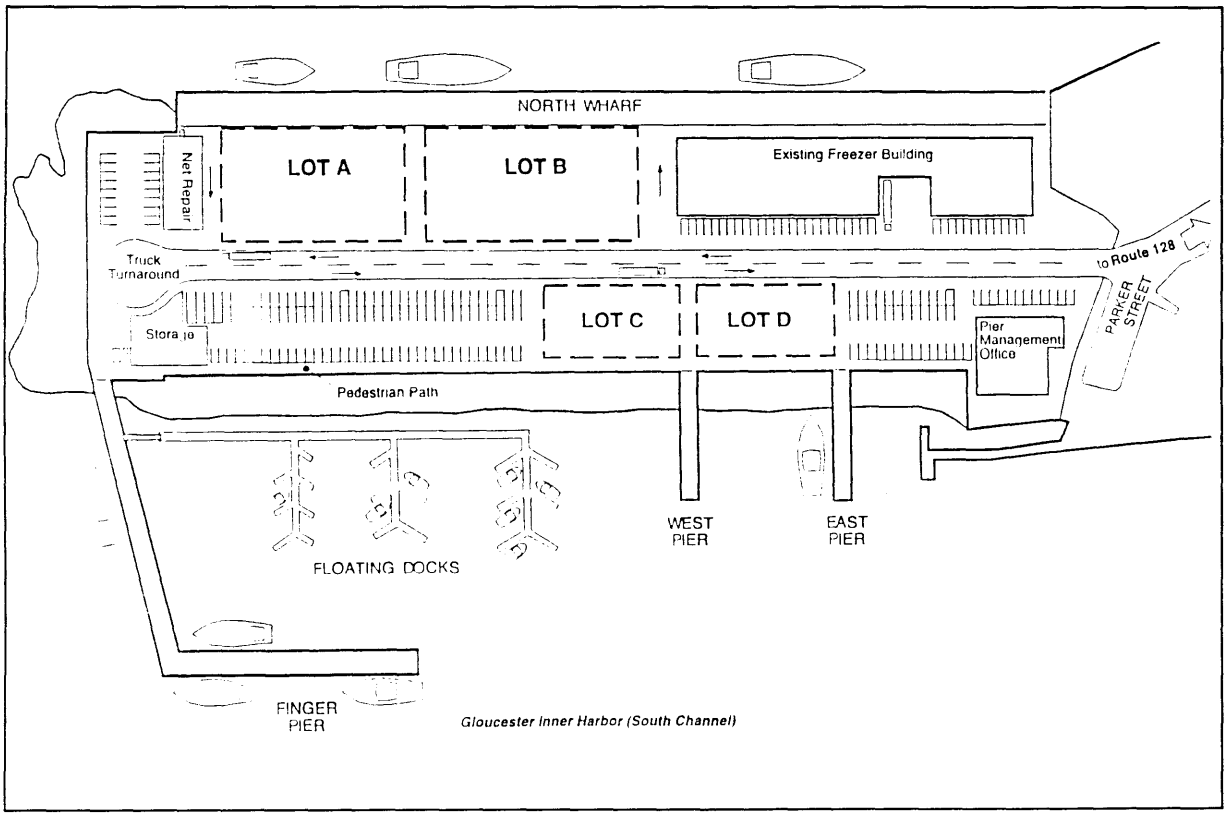
Through a partnership between the MA Land Bank, DEM and the City of Gloucester, a $13 million dollar state of the art docking and seafood industry facility has been built at the State Pier. Recently completed, the redevelopment includes four waterfront commercial development sites on the 7.85 acre pier. In addition to creating development sites that range between 10,000 to 25,000 square feet, with full industrial grade utilities, docking facilities, and ample space for parking, a new incubator stalls building is proposed as important for small scale processing space.

In addition to the trend towards consolidating fishing operations at the State Fish Pier, another key initiative in Gloucester is aquaculture. Recognizing the significant impact that the fishing decline is having on Gloucester, city officials and marine business owners targeted Seaport Bond money to look into the development of deep sea and inshore aquaculture. A result of these efforts has been the development of a salmon fish farm about 50 miles off Cape Ann, while another initiative has been a proposed university-level research institute focused on marine fisheries issues.

Resistance to Introducing New Uses to the Harbor

Although Gloucester's leaders have shown foresight in redeveloping State Pier, they have not effectively confronted the challenge of deteriorating infrastructure elsewhere in the harbor. As a result of the consolidating trend of the fishing industry in Gloucester, uncertainly has arisen over portions of the harbor that are increasingly underutilized.

Figure 3-3: Gloucester State Fish Pier Redevelopment Plan



A significant source of the lack of vision for the older, underutilized portions of the waterfront is the community's ambivalence towards introducing new uses. Although some community and business leaders are creatively searching for a means to reposition traditional fishing industries, Gloucester has been slow to embrace new waterfront uses or the mutual benefits possible from new tourism based commercial uses. Nikeson explains that this resistance to change is consistent with the community's relative isolation and tight-knit ethnic neighborhoods. Despite the strong association of Gloucester with the fishing trade, the city has offered very few opportunities for visitors to catch a glimpse of a working waterfront in action. Until recently, access to the working waterfront in Gloucester was extremely limited.

Although recent efforts to establish a Marine Heritage Trail and waterside trolley are attempts to open up Gloucester's working waterfront, their impact has been limited. The trail and trolley cover a very limited portion of the working waterfront, while local resistance has consistently blocked proposals for commercial uses along the waterfront. Shawn Nikeson of the Chamber of Commerce believes that "there seem to be conflicting messages about expanding tourism. Downtown business owners express frustration that fish processors and wholesalers want to keep the tourists out of the waterfront area. On the other side of the issue are fish processors and wholesalers who feel restricting access along the waterfront is necessary because tourists could get in the way of fisheries operations. Calamo adds that waterfront businesses are especially fearful of possible liability costs from the increased probability of pedestrians being injured on their properties.

Conclusion:

Despite the challenges ahead for redevelopment, Gloucester has a clear vision of itself as a working waterfront. Because in many ways isolation is preservation in Gloucester, increasing tourism or commercial uses to the waterfront are unlikely to soon complement the maritime economy. In contrast to targeting tourism development, as in the case of Fall River, Gloucester seems determined to rebuild its waterfront through repositioning its local maritime economy. Strategic investments through the State Land Bank and the Seaport Bond Bill are working to consolidate activity in the redeveloped State Fish Pier area. Although these efforts may

successfully reposition the maritime economy for the operational demands in the future, they reflect a narrow redevelopment strategy that does not consider the harbor's needs as a whole. Large portions of Gloucester's waterfront will become increasingly underutilized and deteriorated because of the community's narrow view of appropriate waterfront uses.

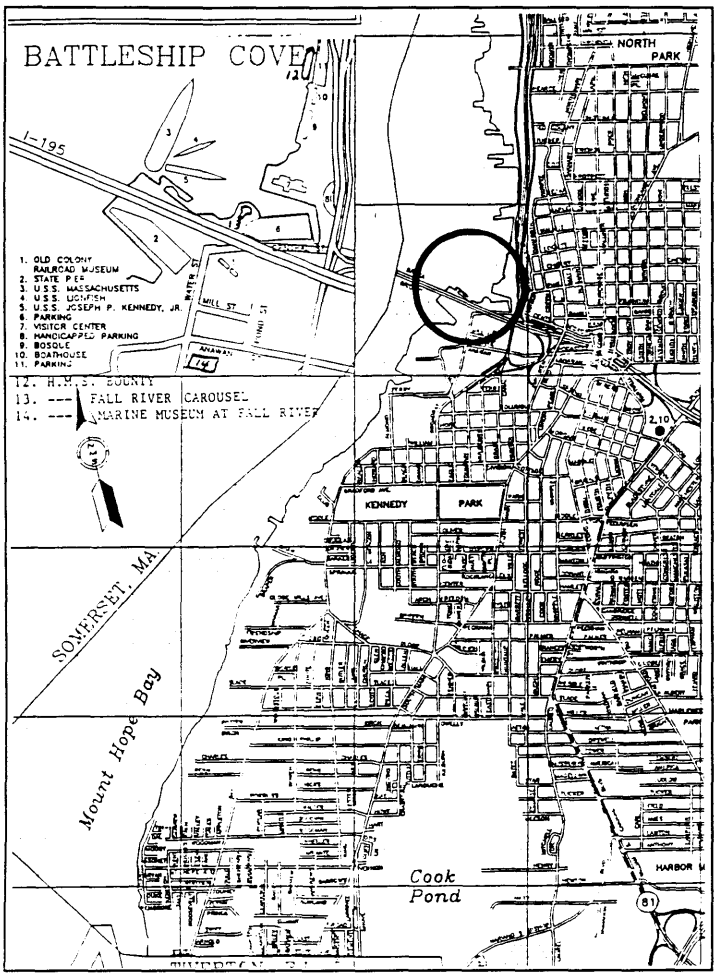
■ Fall River: The Tourism Waterfront

The tourism focused redevelopment strategy for Fall River's waterfront is in contrast to the efforts to protect the working waterfronts in Gloucester and New Bedford. Civic leadership and local land-use regulations reveal the source of this difference. In contrast to interests in New Bedford and Gloucester that strongly support the maritime economy, Fall River's zoning and key waterfront interest groups have promoted tourism and commercial development on the waterfront.

Background

Outside the small portion of the waterfront near the State Pier that is under the control of the stringent DPA regulatory restrictions, the City of Fall River does not have a specific, formal, city-wide policy for protecting or promoting water dependent uses. The zoning along the waterfront is a mixed-use pattern of industrial and unrestricted mixed-use zones, with small areas of single-family residential zones. With the exception of the residential zones, water dependent uses are allowed in each of the other zones, along with a variety of other commercial uses (Hardnick, 1996). In addition to allowing non-water dependent uses on the waterfront, height and bulk requirements allow large projects. Fall River Line Manager Dan Burns explains that this policy reflects the fact that this policy is consistent with the city's objective of promoting commercial development. "Fortunately," he says, "industry declines and limited maritime interest for waterfront properties has kept the issues from being controversial. Also, we don't have many fishermen here to make the land use mix controversial."

Figure 3-4: Fall River's Tourism Waterfront

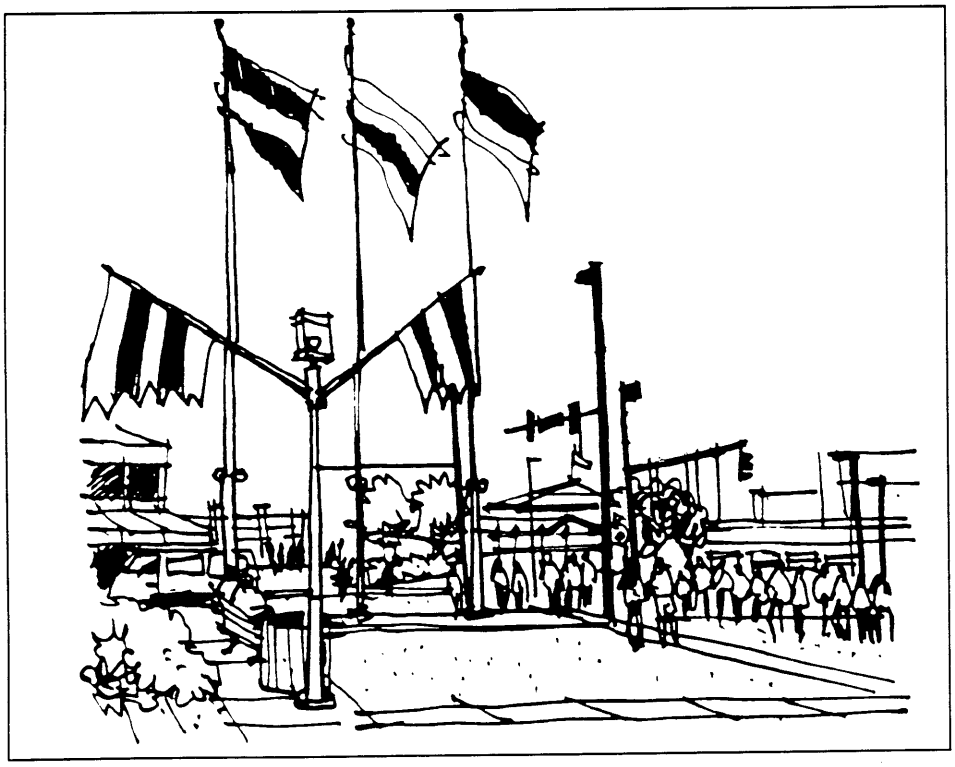


Along with flexible waterfront zoning that allows a wide range of uses, Fall River's zoning reflects the emphasis on enhancing tourism related development and promoting public access. The City's efforts to improve public access to the waterfront has so far been seen in the form of negotiations with developers over public access amenities, the implementation of planning efforts to enhance the linkage between the downtown business area and the waterfront, and the creation of waterfront parks and access areas such as Bicentennial Park and Heritage Park. Despite these efforts, transportation lines, such as roads and rail, along with segregated industrial parcels have limited the effectiveness of improving public access. Local zoning keeps Fall River's waterfront segregated in use, with the tourist attractions kept away from the activity of the working port.

In addition to zoning that does not promote water-dependent uses and tries to promote public access and commercial development, two local agencies, the Fall River Redevelopment Authority and the Fall River Office of Economic Development, have also been emphasizing commercial uses along the waterfront. The waterfront efforts of these key groups remain focused on the State Pier. The 10 acre site is strategically located adjacent to the city's primary tourism draw: the Heritage Park/Battleship Cove area. The site is presently used primarily for warehousing of goods which are trucked to the site, but also serves as the berthing area for some cargo ship vessels.

Through the Seaport Bond Bill, $18 million has been earmarked to implement a largely tourism based redevelopment of Fall River's State Pier. Much of the direction for this effort will come from the LDR Waterfront Plan of the State Pier. The report developed from a committee that was formed in the late 1980s to study whether the pier might be renovated into a mixed use commercial attraction with a convention center and moorage for cruise ships. The LDR Report agreed that the State Pier is strategically located so that its use will greatly affect the surrounding development, and described the State Pier as a "prime opportunity site." The assessment of development potential included a study of seven different uses, including continued use as a cargo pier/port facility. It assessed the issues by posting the following question: "Is the potential for increased cargo activity and new port-related jobs great enough to forego other development opportunities? Would an enhanced cargo facility represent the highest and best use of the site?" (LDR, 1988).

Figure 3-5: Possible Waterfront Activity at Fall River's Battleship Cove



The recommendations from the LDR Waterfront Plan were that the city concentrate on developing tourism and more public access to the waterfront. The study recommended against additional development of the cargo operations on the State Pier. While "there appears to be limited, but real, potential for some expanded cargo activities....non-port uses appear to have stronger potential for making the highest and best use of the site" (LDR, 1988).

Instead, the LDR study called for the replacement of the existing storage sheds on the Pier with a high-bay loft structure running along the entire northern frontage of the State Pier. As an interpretive exhibit space, it was envisioned as a tourist attraction to complement the adjacent draw of the battleship. Long term plans for the Pier focused on concentrating the tourism attractions there. These proposals included relocating the existing Lizzie Borden Museum and the Marine Museum to the site, as well as developing retail shops. Of these recommendations, the placement of a historic carousel on State Pier is the only action that has been realized to date.

Although the continued support of the plan and the $18 million earmarked for redevelopment of the Pier may lead to the implementation of the plan, some community leaders such as Burns feel that a more creative strategy that mixes tourism and cargo operation should be pursued. He feels that the planned MBTA rail improvements could also potentially help expand freight cargo operations presently at the Pier. Burns envisions the existing 96,000 warehouse re-adapted to serve the needs of cruise ship traffic, cold storage for cargo, and basic warehousing.

Despite the potential to encourage both tourism and cargo operations along the waterfront, Hardnick believes that the strong support for the LDR recommendations of tourism on the State Pier will drive the redevelopment effort. With the resources at the Heritage State Park and Battleship Cove, linkages with additional tourism based development on State Pier is seen as a way to concentrate and expand the waterfront's interpretive potential.

Additional investments further illustrate the tourism based vision for Fall River's waterfront. The cornerstone to the tourism development efforts on the waterfront is attracting cruise ships. Already, Fall River has successfully handled cruise ship traffic, and with $2 million included in the Seaport Bond Bill for improving docking facilities even skeptics are convinced of the potential. Recognizing the growth of the cruise industry and the potential of linkages with nearby Newport, Rhode Island, leaves Raposo hopeful that cruise ship traffic has enormous growth potential to increase visitation to the existing attractions in Fall River.

Recognizing the limitations to locally derived visitation, Raposa believes that a linkage to Newport is key to the success of the initiative. With an international reputation, Newport is already a significant attraction for cruise ships, such as the Veracruz, going from New York to the Canadian Maritime Provinces. Fall River officials hope to capitalize on the docking and launch constraints of cruise ships going into Newport. Raposo explains that capitalizing on these constraints would be a strategy that brings ships into Fall River, bring them through local attractions, and then shuttle them down to Newport by land. If successfully coordinated with the attractions in Fall River, the community would gain a significant increase in visitation. The incentive to the cruise ship companies is that the immediate, uncomplicated moorage in Fall River and a 20 minute ride to Fall River is comparable to the time to actually dock in Newport.

Recreational boating has also been identified as an important component of the tourism strategy. Plans are being made to create a marina/recreational boating development to draw boaters to the expanding shoreside attractions. Longer term proposals include the development of a deep draft yacht service basin in Fall River (Raposo, 1996). Such a facility is seen as a potential complement to regional attractions and could become the site for water-based gaming. As with other aspects of Fall River's comprehensive tourism strategy, the linkage to Newport is seen as the key. Since it is price competitive and close, Burns believes that Fall River can successfully handle the service and moorage of deep draft yachts to the Newport market.

Conclusion

In contrast to Gloucester, Fall River has not been hesitant to reconsider the use of its waterfront for non-maritime industry. Past waterfront redevelopment efforts reveal the community's embracing of a tourism focused waterfront vision . As Raposo explains, tourism has been a key part of the community's redevelopment efforts for nearly fifteen years. Despite the lack of a strong image and active commercial fishing trade, as in Gloucester and New Bedford, Fall River is working hard to expand its existing attractions to attract tourism dollars. However, by separating its waterfront attractions from active harbor industry, Fall River is missing an important element of activity on the waterfront to attract visitors. By simply brining in former battle ships and historic carousels, Fall River is creating static attranctions with no relationship to the story of the community and its harbor. The lesson for New Bedford is that tourism should consider context to be successful. A more dynamic tourism strategy is to explore the potential of integrating active and genuine uses in such a way that mutual benefits are created between tourism and industry.

Figure 3-6: Tourism Activity that References a Local Fishing Economy

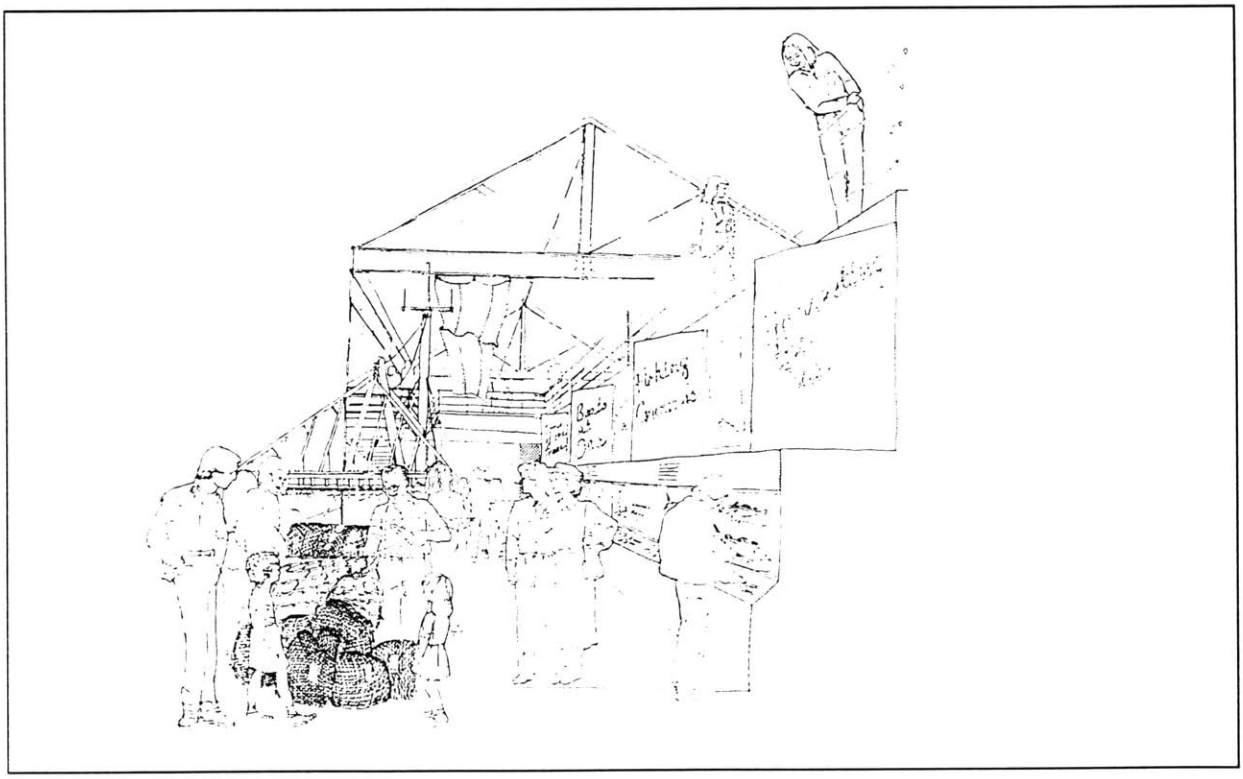
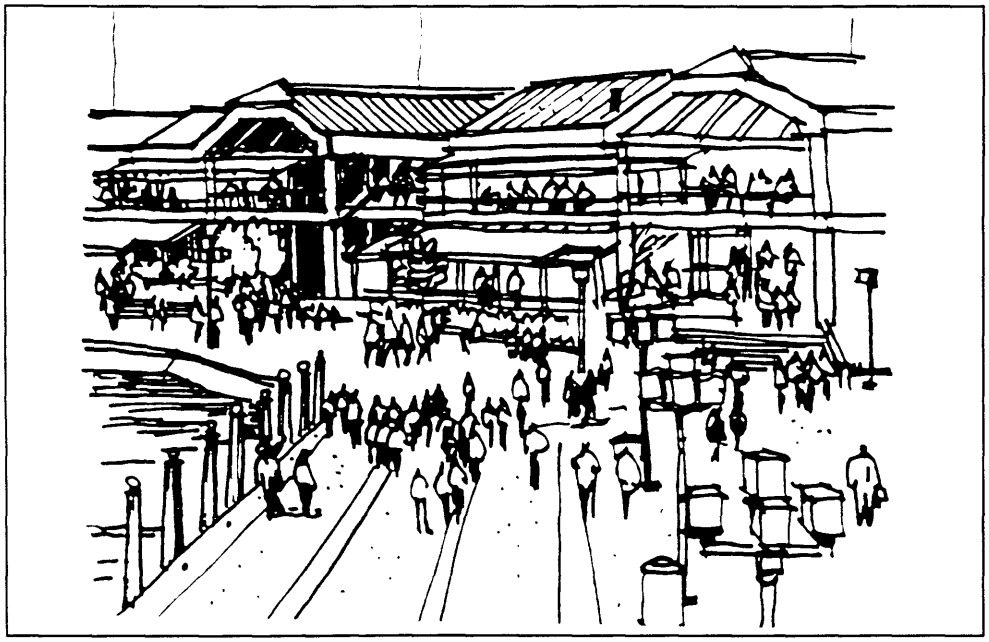


Figure 3-7: Baltimore's Inner Harbor Festival Marketplace



THE NATIONAL CONTEXT

Urban waterfront development in the United States has experienced a considerable boom since the mid 1970's, as cities from coast to coast have sought to rediscover and revive their water's edge. A growing appreciation of the water edge and the financial benefits of redevelopment has led to a swift and sudden urge to reclaim this intrinsically important part of the city. Public consensus led to efforts to revitalize this old asset, the waterfront, and to utilize it in the form of accessible environments that fulfill the public's "desire to work, play, and live at the water's edge" (Torre, 1989).

The scale and type of waterfront redevelopment projects vary greatly. Although projects such as Baltimore's Inner Harbor or San Francisco's Fishermen's Wharf have received significant attention for recreating the waterfront as a public space with many attractions, they represent recreated waterfronts that had long lost their function as true centers of maritime industry. Less famous, but more relevant to New

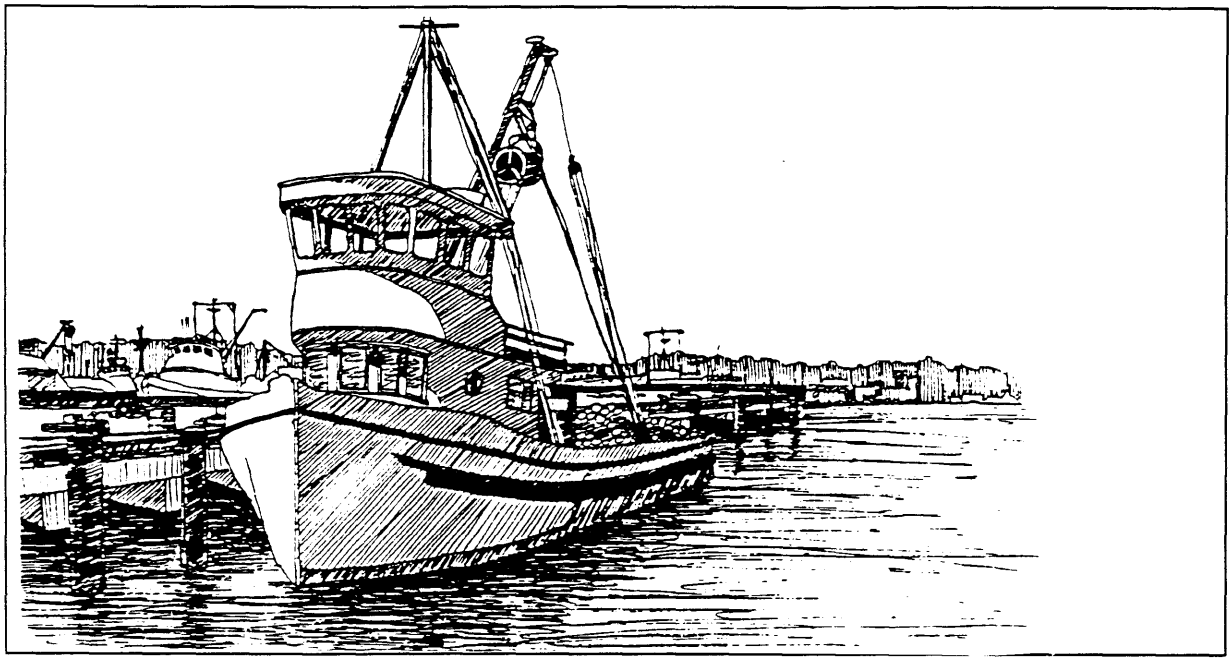
Bedford, waterfront redevelopment projects represent more modest efforts at balancing tourism uses along a working waterfront.

In planning the redevelopment of a working waterfront, successful efforts have demonstrated that tourism and recreation can be compatible with marine industry. In fact, a strategically planned tourism and recreation developments have the potential to become economic catalysts for the redevelopment of the working waterfront as a whole. Harbor tour boats, recreational moorage, cruise ship terminals, commercial shops, aquariums, and museums are all uses that have been successfully integrated into scores of working waterfronts across the country (Smith and Fagence, 1995) In many cases, mixed use developments occupying either new sites or adaptively reused structures have been seen as appropriate ways to redevelop decaying waterfronts, while restoring authentic marine activity (Breen, 1985).

In addition to offering an important subsidy to traditional maritime industry, recreation and tourism on the waterfront offer an unusual opportunity to educate people of all ages about the social, maritime, cultural, and environmental heritage of an area Urban waterfronts usually have historic connections that very often include the founding place of a city or its reason for being. This means that urban waterfront sites inevitably possess an opportunity to interpret, portray, and personify an area's history, both to itself and to the visiting public. Urban waterfronts can thus create a sense of civic pride (Wrenn, 1983).

Successful projects demonstrate the benefits that recreation and tourism can have on working waterfronts. Improvements of physical, visual, and interpretitive access have enabled the active story of seaports to be told, without compromising traditional industries. At the same time, the infusion of money from recreation and tourism has offered important subsidies to sustain the maritime economies in working waterfronts. A brief profile of creative strategies in Seattle demonstrates the potential for expanding the interpretive potential and mix of uses along a working waterfront for mutual benefits to visitors and industry alike.

Figure 3-8: A Purse Seiner Vessel at Seattle's Fishermens Terminal



■ Seattle: The Integrated Waterfront

Efforts in Seattle demonstrate the potential for integrating tourism and marine industrial uses along the waterfront to create a sustainable harbor economy with economic cross-benefits. This sophisticated approach grows out of the city's progressive tradition in planning for its active and vital working waterfront.

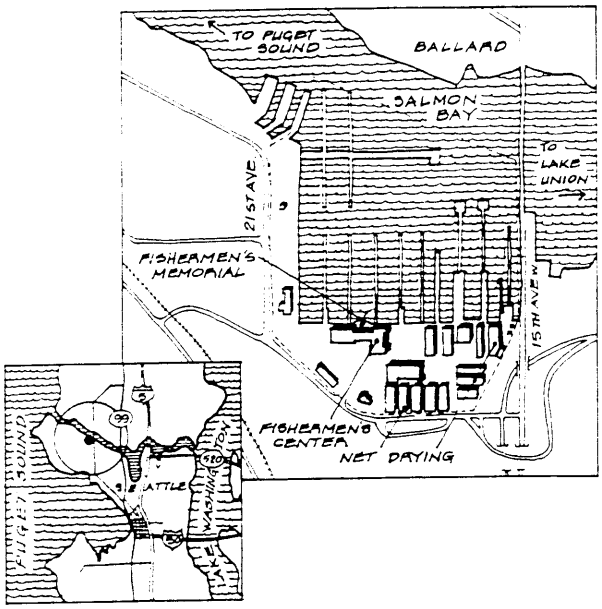
It is important to note up front that Seattle's working waterfront faces displacement issues that are quite different from the underutilization problems in smaller New England seaports. In contrast to the disinvestment problems facing New Bedford, strong growth has created redevelopment pressures to displace small maritime industries in Seattle.

Despite the different forces at work on Seattle's working waterfront, the city's integrated waterfront planning strategies are relevant to New Bedford. In areas such as the Henry Pier in the Lake Union area and along the central waterfront, the City has struggled to balance the interests of traditional maritime industry with

commercial development. Creative land use planning initiatives in the Harborfront area near downtown and development projects such as Fishermen's Pier demonstrate the balance that is possible.

One example of creative waterfront planning is evident in Seattle's Harborfront area. Increasing the utilization of historic pier sheds motivated the creation of a creative policy in the early 1980's that requires owners of piers in this area adjacent to downtown to upgrade their perimeter docks and provide cleats for vessels to moor there. These requirements are triggered when pier owners apply for a redevelopment permit. The city's intent is to have tourist-serving restaurants and retail stores on the ground floor and the offices on the upper floors that will provide a subsidy for improving the commercial vessel moorage. Overall, the strategy is an attempt to retain authentic maritime activity on the city's historic Harborfront. James Down of the Seattle Planning Department explains that this strategy has shown that office use could mix quite well with tourist-related uses on the deck level. "With declining revenue from the Feds and states, the piers would probably not have been successfully improved without the revenue from the new uses" (Down, 1996).

Figure 3-9: Seattle's Fishermens Terminal Location and Site Plan



Fishermen's Terminal

In addition to the creative integration of uses along the waterfront to create economic cross-benefits, Seattle is also the home of Fishermen's Terminal; a working commercial fishing facility that incorporates limited commercial development to create a lively mix of uses that attracts both visitors and residents alike. The Terminal successfully integrates interpretive access with savvy financial planning to offer mutual benefits to tourists and fishermen alike.

Fishermen's Terminal is located on Salmon Bay, which is connected to the Lake Washington Ship Canal. The surrounding area is largely residential in the hills to the east and industrial uses in the adjacent lowlands. Many of the nearby marine industrial uses are underutilized. Railroad tracks, water and major arterials surrounding the terminal limit access to the surrounding neighborhoods. Responding to changes in vessel sizes and facility needs for Seattle's commercial fishing industry, the Fishermen's Terminal became the target of redevelopment in the 1980's. One of the primary reasons for the improvements at Fishermen's Terminal arose from the shortage of moorage space for the increasing number of large factory trawlers. The Port of Seattle wanted to maintain Seattle's central position for the North Pacific fishing industry and recognized that the need for affordable moorage for all types of vessels would be key to that goal (Breen, 1994). The creative notion of the redevelopment was a means to increase revenues for the Port, so that subsidies could be continued for small boat moorage.

A thorough design process during the mid-1980's resulted in a plan from a committee of industry and commercial interests to redevelop the property in a manner that met facility needs without displacing independent fishermen through high rents or too much tourism related development. Emily McDonald explains that a persistent fear was that the development would become a Fishermen's Wharf type development (McDonald, 1996).

The expanded Fishermen's Terminal reopened in 1988. The $13 million redevelopment included bulkhead repair, new net sheds, additional commercial and retail space, new restaurants, storage, parking, and dock extensions for mid- to large-

size vessels. The redevelopment was designed by MAKERS and Bumdardner Architects of Seattle and included innovate public access that protects the needs of industry, without compromising access for visitors (Port of Seattle, 1988).

Use -- Activity at the terminal depends on the particular fishing season underway. The terminal houses six different types of fishing vessels, which generally focus on different species of fish at different times of the year. July and August are the least busy times of the year at the terminal, while public use is the highest during that time (Mc Donald, 1996).

When in port the fishermen need large areas to dry and repair their nets. Maneuvering space is required for forklifts, trucks, and other vehicles used in loading and repairing vessels. The fishermen spend much of their time in port repairing their boats and preparing supplies for the next trip. According to Bob Alverson of the Fishing Vessels Owners Association, Seattle provides a vast infrastructure of marine services on which the vessel owners depend (1996). Marine electronics, haul-out services, marine architects, and metallurgists are just a few examples of the many services they require in the vicinity. The terminal itself provides for many of their needs, including marine professional services, refit space, storage, fuel, marine supply, haul-out, and a full service shipyard.

Design Features --The terminal's visual character is dominated by the hundreds of vessels in port at any given time. The terminal property consists mostly of submerged moorage slips, connected to the mainland by a series of parallel piers. The larger northwest pier, which is perpendicular to the others, services the large factory trawlers. The vessels provide visual complexity due to the wide variety of boats, materials and sizes. MacDonald explains that a certain coherence is also provided by the repetition of boat masts and hulls, the grouping of boats by size, and the repeated piers (1996).

A public plaza and fisherman's memorial were built between the Fishermen's Center and the water. The public plaza, marked by concrete paving blocks and yellow traffic bollards, provides a series of twelve benches along the water. New

interpretive signs located within the plaza explain the history and workings of the fishing fleet. The memorial consists of a sculpture depicting a fishermen hooking a halibut. The various species caught by the fleet are molded into the bronze base. The sculpture is flanked by granite stones with the names of fishermen lost at sea since 1900 (Port of Seattle, 1988).

Public Access -- Fishermen's Terminal has historically been open to the general public, although prior to the 1988 redevelopment there were few facilities designed for primarily for public use. The Wharf Restaurant provided a convenient place to eat for the fishermen, the adjacent communities, and the general public. Visitors can also walk out onto the individual piers, since access onto the piers has never been restricted. Interpretive signs along the dock provided background information on the fishing industry (Port of Seattle, 1985).

In developing the public facilities, the Port attempted to strike a delicate balance between allowing public use, while providing for industry needs. The redevelopment plan states that "...future developments must retain the terminal's emphasis on the fishing fleet and its working atmosphere...to avoid heavy emphasis on non-fishing industry related recreational or tourist development" (Port of Seattle, 1985). To achieve this balance, the Port decided to centralize the public facilities and parking, in an attempt to keep the majority of visitors within a specific area, while not restricting access to the rest of the terminal. The intent was to use the paving, benches, interpretive signs, memorial sculpture and bollards to distinguish the public plaza from the working area.

In 1988, the Port expanded public access with redevelopment of the terminal. According to Bob Alverson, this was partly in response to the Seattle Shoreline Master Program's request for public access. The port also recognized the terminal's long-standing use by the public and the potential economic benefit of improving access. The redevelopment project replaced the existing Wharf restaurant with a larger building, the 63,700 square foot Fishermen's Center. The center contains two restaurants, a tavern, a fish and chips stand, retail businesses, and office space. A circular tower rises from the center, used for observations by port security, but not

staffed on a regular basis. Additionally, the site also includes more than twelve other sheds and structures that include storage facilities, repair areas and nearly 1,000 parking spaces (Port of Seattle, 1988).

According to Bob Alverson, the increase in visitor use has not significantly affected the fishermen. There were some complaints about the adequacy of the piers and repair facilities, but none that would be caused by increased public access. However, one problem raised by Mac Donald was the shortage of parking as a result of introducing a restaurant to the site. Otherwise, common problems in the area, such as theft and vandalism have not increased with the completion of the public improvements.

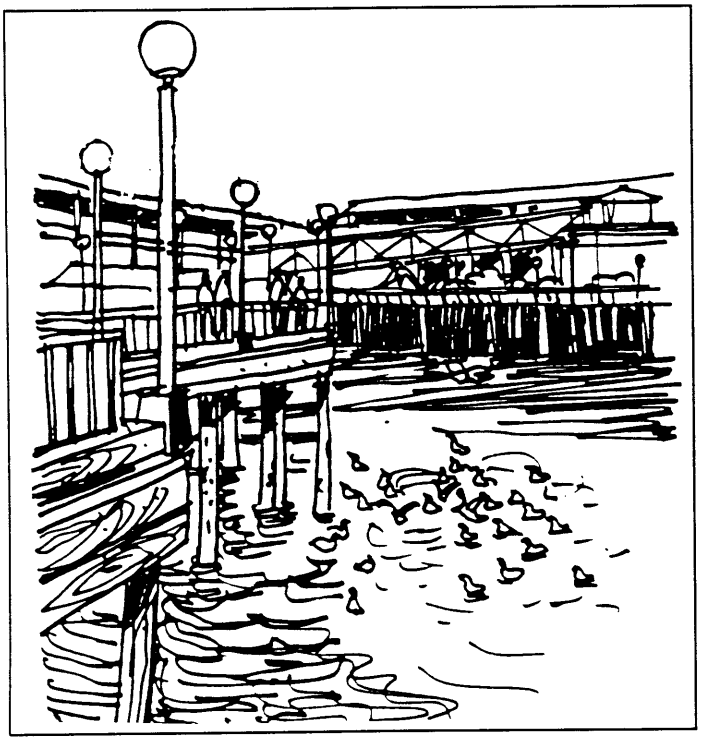
■ Mystic Seaport: The Interpretive Waterfront

The Mystic Seaport illustrates an insightful example of the potential for interpretive development. The Seaport is not a preserved historic site, but rather it is a re-creation of an idealized New England maritime community. Although it would be incorrect to directly compare Mystic to an actual fishing community like New Bedford, much can be learned from the Mystic Seaport's active interpretative methods in telling the story of American fishing. The key distinction from the tourism redevelopment strategy in Fall River is that Mystic is not a static tourism waterfront with attractions without activity or context. Instead, Mystic is an active, interpretive attraction.

The Seaport is a privately operated non-profit educational maritime museum site that "actively pursues the collection, preservation, and exhibition of artifacts and skills related to the sea and its influence on American life" (Mystic, 1995). Besides housing museum collections, Mystic is also a re-creation of a New England maritime community. Dozens of historic structures have been moved to the site or reconstructed from the ground up over the years. With eight historic vessels afloat, including the whaler Charles W. Morgan from New Bedford, a National Historic Landmark, and more than 300 antique water craft on shore, Mystic has one of the largest historic vessel collections in the world. To restore and maintain this collection and to preserve shipwright skills, Mystic has developed a fully functional

preservation shipyard, as well as a small boat shop, an operating sail loft, and even a ship model-making shop, all of which are open to visitors for viewing and informal discussion (Mystic, 1995).

Figure 3-10: Mystic Seaport



As a complement to the maritime museum, Mystic also is the home of the Marine Life Aquarium, owned by the Sea Research Foundation, Inc. The aquarium benefits from the drawing power of the special events planned throughout Mystic's "museum village". Opened in 1973, Mystic Aquarium consists of 72,000 square feet of improvements on an 18-acre site, and is now undergoing a $45 million renovation (Adamson, 1996). The Aquarium is a self-supporting, non-profit enterprise with a projected 1996 operating budget of $6.8 million (Mystic 1995). Mystic recently created an organization to fund undersea exploration, the Institute For Exploration, headed by Dr. Robert Ballard, Director of Woods Hole Oceanographic Institute, whose investigations of famous shipwrecks have been widely chronicled in the media by National Geographic.

■ Other Examples of Interpretive Waterfronts

Additional innovative efforts are also possible to encourage interpretive access to working waterfronts. Interpretive Access can be seen as all the varied kinds of things that enable people to learn more about their waterfront industrial heritage. It is the educational component of public access. New Bedford's working waterfront as a theme for public education activities has enormous potential for growth as interest in architectural or environmental issues increases in the community. The popularity of tours of industries in other parts of the country suggest that there is a significant

opportunity to open up maritime industries, such as commercial fishing, for interpretation. Beyond the immediate benefit of generating revenues, such efforts can offer an increased awareness of maritime activities in a busy port that can market the city to potential investors.

In addition to telling the story of the commercial fishing industry, New Bedford's international cargo trade also has enormous interpretive potential. In the Pacific Northwest, international cargo operations of ports have become the source for popular harbor attractions and additional harbor revenue. In Vancouver, an extensive public education program has been developed by the Vancouver Port Corporation to build awareness of and appreciation for the Port of Vancouver as a national trade and transport resource, as well as a source of substantial economic benefits. Audiences of the Port's public education program include students, community groups, professional organizations, foreign delegations, and the general public (Port of Vancouver, 1995).

Similar programs have been ongoing at the Port of Oakland since 1976 where rented commercial tour vessels from the San Francisco Red and White Fleet tour the cargo port operations. The tour explains container cargo operations and offers a history of Oakland's waterfront. According to Mary Fernandez, the tour has become very popular, attracting thousands of tourists each summer. Additional interpretive outreach includes land facilities tours by vans and a speakers bureau that addresses groups throughout the area (1996).

CONCLUSIONS AND DIRECTIONS

Between the working waterfront vision for Gloucester and tourism waterfront strategy for Fall River, lies the future vision for New Bedford. Rather than choosing to strengthen maritime industry at the expense of developing tourism, or vice-versa, New Bedford should seek the middle ground. Despite the challenges of integrating new uses with maritime industry, the potential cross-benefits from integrating tourism and industry on the waterfront are significant.

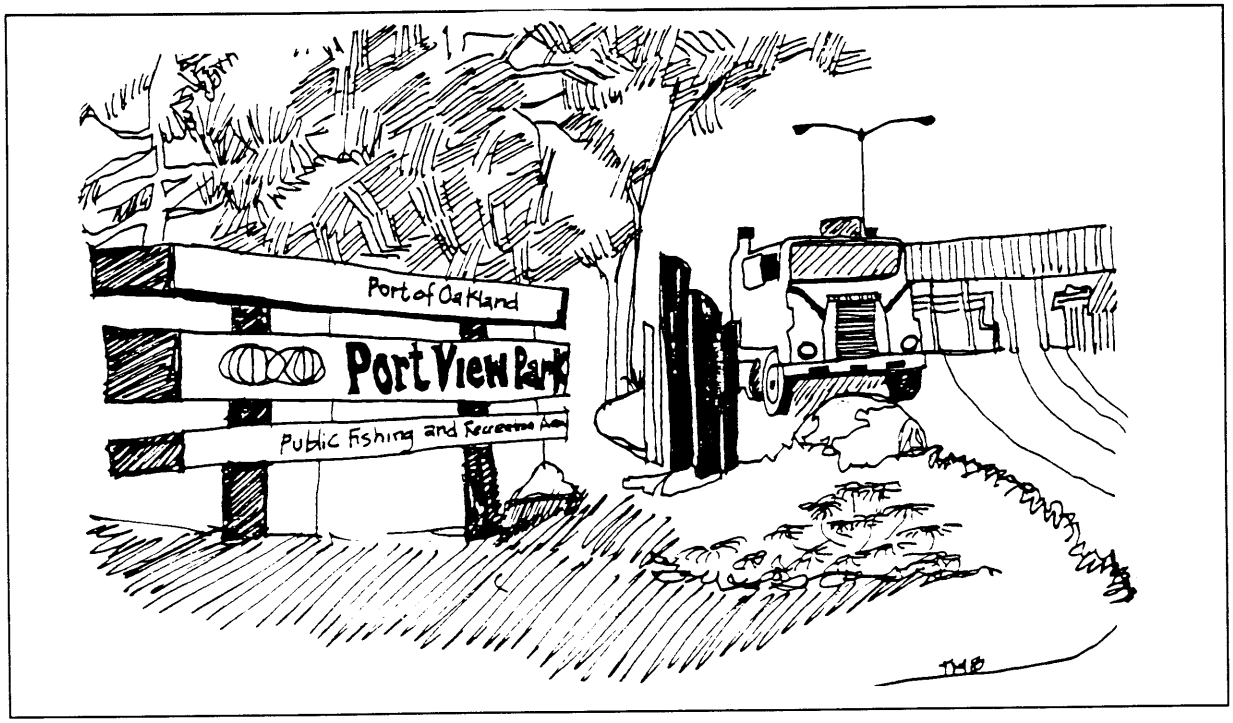
Although New Bedford has not moved as far along as Gloucester and Fall River in establishing a vision for its working waterfront, the community has been wrestling with directions for its future. The challenge of "balancing land uses," as identified in Chapter Two, reveals New Bedford's ambivalence about seeking new waterfront uses to revitalize the waning traditional harbor economy. Unfortunately, the City's current considerations for economic diversification along the waterfront have been rather narrow and almost exclusively focused on expanding maritime industries.

Despite the potential benefits to be realized by tourism related development in New Bedford, very little has been able to occur along the waterfront. Tourism has been perceived by many waterfront industries as a threat to waterfront infrastructure. The effect of these misconceptions about the compatibility of waterfront tourism and industry have prevented redevelopment efforts from taking advantage of the potential for economic cross-benefits.

While formulating harbor-use policies and maritime industrial-development strategies, the community should not overlook the potential contribution of tourism to the traditional maritime economy. Today, more than ever, New Bedford's commercial fishing and processing industry needs broad support as it goes through this period of adjustment. It also needs to promote new products to new customers. Clearly, it would be good public relations for the maritime community to share its story with the broadest possible public.

The "middle ground" between the maritime industrial focused strategy in Gloucester and the tourism focused strategy in Fall River is the redevelopment of the New Bedford-Fairhaven Harbor as an integrated working waterfront in the spirit of Seattle. An economically sustainable strategy would involve improvements to marine activities, such as cargo handling and commercial fishing operations, through opening up these operations to capture the attention of inquisitive visitors. Successful examples in Mystic, Vancouver and Portland illustrate the potential success of such efforts. Fish auctions and fish-handling halls, Coast Guard vessel moorage, research and survey vessels, tug dispatch stations, recreational boat moorage, historic vessels and dock tours are among the authentic, contemporary tourism based activities that might be courted to coexist with waterfront industries.

Figure 3-11: An Oakland Park with Views of the Working Waterfront



4 STRATEGIES FOR THE HARBOR

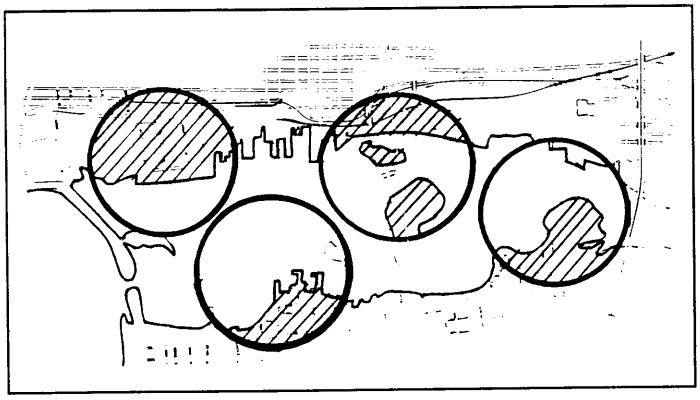
This chapter establishes a framework of strategies for the proposals in the following chapters. After explaining the key strategies to guide redevelopment efforts, the end of the chapter identifies the six subareas that are used to organize the harbor analysis.

Four key strategies should guide the redevelopment of the New Bedford-Fairhaven Harbor:

- **Balance uses to create mutual benefit**
- **Create catalyst development opportunities**
- **Connect the harbor to regional investments**
- **Develop an intermodal transportation network**

BALANCE USES TO CREATE MUTUAL BENEFIT

Introducing new commercial, service, and recreational uses can reinvigorate the Harbor without compromising the livelihood of water dependent industry. In light of current fiscal constraints and industry cycles of growth and decline, a sustainable mix of uses for the waterfront is essential. No single use of the waterfront will transform it. The potential synergy of linking traditional industry with new maritime uses and tourism is the key to transforming New Bedford's waterfront.



Traditional Industry

Despite current declines, the traditional fishing and processing sector should remain a vital part of the harbor economy. These uses may once again thrive through creative efforts to facilitate infrastructure improvements that respond to changing market trends.

New Maritime Uses

The cyclical nature of traditional industry means that New Bedford must broaden the types of marine industries included in the harbor. The introduction of new maritime uses, such as aquaculture, marine sciences and niche cargo can build upon the social and physical capital already present in the harbor.

Tourism

New Bedford's historic and vital working waterfront has significant interpretive development potential. Turning underutilized property into attractive open space and deteriorating historic sites into tourism resources would add enormous value to the harbor environment and create important revenue to maintain harbor infrastructure.

■ Mutual Benefits

Planning for this economically diverse and sustainable nexus of waterfront uses should assure that financial cross-benefits are realized. The Plan follows these principles to create a flow of revenue:

Tax Revenue

A direct way that balancing land uses on the waterfront can create mutual benefits is through the tax revenue generated. The City and its Harbor Development Commission are the primary landowners along the waterfront and are in critical need of new revenue to maintain and improve harbor infrastructure. Through the carefully managed introduction of tourism based commercial activities, tax revenue could be generated and then directly reinvested in maritime-industrial infrastructure. The Plan identifies a number of proposals that illustrate this flow of funds. Examples include

developing recreational boating and introducing commercial activity into underutilized waterfront buildings.

Infrastructure that Serves Multiple Needs

Physical improvements that are made should serve more than one purpose. Consolidating and integrating uses could allow for sharing infrastructure improvements between commercial and industrial uses in a mutually beneficial way. Proposals are offered for both road and rail improvements. One example is the proposal to redesign the limited access waterfront arterial, Route 18, into a boulevard. The redesign that is offered improves both public access and industry . The idea of shared rail infrastructure is illustrated in the proposed improvements to a rail spur through the Urban Waterfront that could successfully balance freight and tourism based trolley traffic.

Constraints into Opportunities

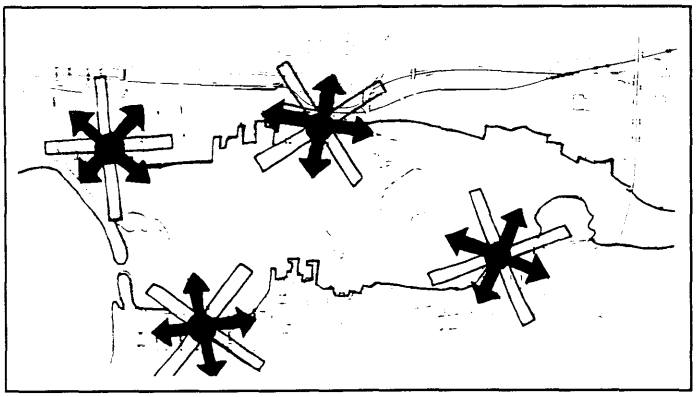
Offering new uses can unlock the development potential of waterfront sites. Currently, the resistance to non-maritime industrial uses for the waterfront has placed a stranglehold on sites that have industrial constraints. Also, existing dredging and environmental remediation efforts are seen as only constraints, not opportunities. The Plan creatively deals with these issues through offering proposals that realize that the mutual benefits possible. For example, the proposed toxin Confined Disposal Site (CDF) is offered as a Marine Science Park, while a large site considered undevelopable is "unlocked" through bringing in maintenance dredging fill to adequately push out the shoreline to allow for dockage.

Revenue Subsidies

Balancing tourism and industry needs can also allow for creative revenue subsidies that cover infrastruture maintenance and operating expenses. The Plan identifies numerous proposals that integrate uses in an effort to create a more sustainable harbor economy. One example is the creation of a Fish Auction and Market to serve both the needs of the commercial fishing industry and visitors interested in viewing these operations while shopping

in an authentic fish market. Another proposal is for the creation of an International Marketplace that can become an exhibit and distribution center to service the port's cargo activity, while receiving supporting revenue as a conference center and duty free store for visitors.

CREATE CATALYST DEVELOPMENTS



In the context of this habor redevelopment plan, a catalyst is seen as a site with significant development potential to attract future investments. Targeting catalyst development sites is an important key to unlocking the significant redevelopment potential in the Harbor because this strategy links economic development opportunities to actual sites. Currently, there are a number of significant development sites in the Harbor. Unfortunately, little effort has been made to identify these opportunities with significant potential for economic cross-benefits, or to envision their potential as catalysts for future development.

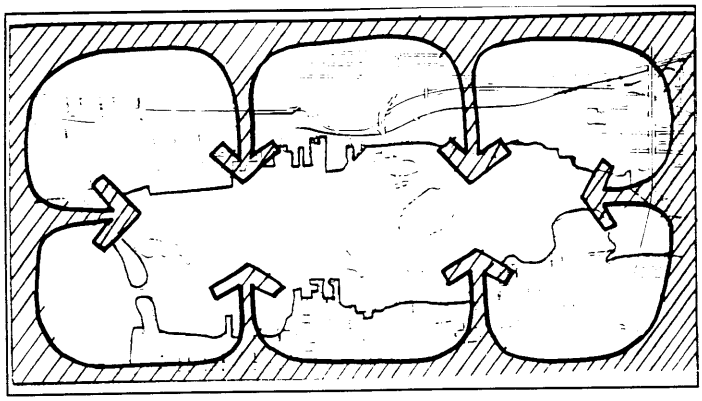
With New Bedford facing economic and market constraints, creating catalyst development sites is essential. In the current economic climate, federal and state funding is increasingly limited. New Bedford and Fairhaven will need to be more entrepreneurial in attracting private investment that can help pay for necessary public improvements. In order to maximize public dollars, strategic improvements to infrastructure should be made that can support increased activity and utilization of the Harbor, while serving as a catalyst for future private investment.

Since past redevelopment efforts have not successfully generated catalysts for waterfront redevelopment, the goal should be to create a dynamic mix of uses that can lead to a sustainable Harbor economy. The proposals

offered for the Urban Waterfront, Harbor Terminals and Open Space and Recreation Subareas identify a number of key opportunities. These sites include the Standard Times Field, State Pier, the Old Railyard, and the Commonwealth Electric site. The proposals offered for each of these sites explain the opportunities possible that can serve the multiple agendas of harbor constituent groups.

Closely related to the strategy of catalyst development sites is a careful consideration of phasing. This consideration is focused on the fact that redevelopment will take many years. Prioritizing investment in catalyst sites which will have the greatest return is one consideration. Also, key catalyst sites are those with the greatest flexibility to adapt to changing market trends. Many of the key catalyst sites, such as the Commonwealth Gas and Electric Company and Standard Times Field, are very large and are offered as phased projects with more than one use.

CONNECT THE HARBOR TO REGIONAL DEVELOPMENT INITIATIVES



Along with creating development opportunities along the waterfront, harbor redevelopment efforts should be physical and programmatically connected to regional development initiatives. In pursuing this strategy, the study of the surrounding context should focus on efforts that could have significant implications for future waterfront investment.

■ Connection Types

Physical Connections

The waterfront must become better connected to the greater community and region. Important connections should be made between the waterfront and proposed casino near the airport, national park in the adjacent historic

district, and Fairhaven Center. These connections include both pedestrian and intermodal transportation links.

Activity Connections

Waterfront redevelopment efforts need to programmatically connect to regional activities. A number of key connections should be make. One example is the potential linkage of the historic whaling piers with the Whaling Museum and proposed national park. Through bringing interpretive attractions back to their original staging point, activity can be generated that connects with existing tourism draws.

■ Key Regional Development Opportunities

Proposed National Park

The designation of the existing Waterfront Historic District as a National Park is currently under consideration in the U.S. Congress. Since the proposed site is only blocks away from the waterfront, the impact of national park designation could be significant. The National Park Service's preliminary cost estimates for creating a national park at New Bedford are approximately $10.5 million for capital expenditures and $3.0 million in annual operating costs. Although proposed federal budget cutbacks are aimed at the National Park Service, significant political support and previous investments in the existing National Historic District area leave hope that a scaled back version of the park is possible. Already, the City of New Bedford and various public and private groups have taken on much of the development cost of the park by preserving and restoring historic buildings, maintaining cobblestone streets, and acquiring a headquarters building now occupied by the Waterfront Historic Area League (WHALE).

Proposed New Bedford Casino

A casino is currently proposed for the site of the municipal golf course, between the Harbor and the airport near the intersection of Route 140 and Interstate I-195. There are also plans to tie its development to hotels, restaurants and other commercial uses. It is important to consider the

opportunity for linking the casino to potential entertainment, tourism, and transportation uses at the Harbor.

UMass-Dartmouth Center for Marine Science and Technology (CMAST)

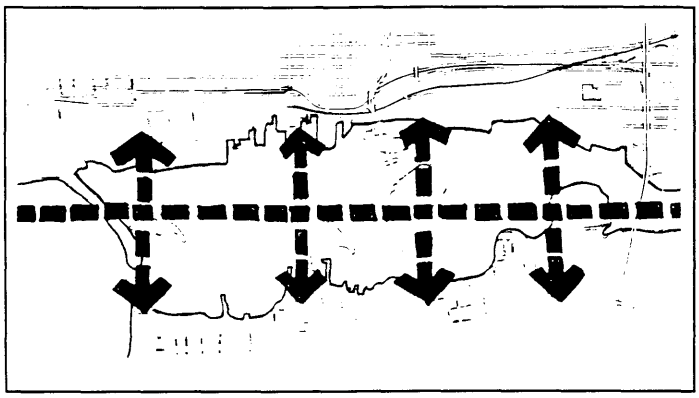
The new CMAST center is a $10 million, 32,000 square foot facility to be constructed near New Bedford's Fort Rodman, approximately 3 miles south of the inner harbor studied in the Plan . CMAST faculty have already been involved in research projects throughout New Bedford and the Buzzards Bay region. Connections between the expanded CMAST facilities and inner harbor redevelopment efforts could include research and technical support to assist the troubled fishing industry and introduce new marine science industries.

Fairhaven Center

The historic attractions of Fairhaven Center could also benefit from closer links to the Harbor, particularly in the form of clearer pedestrian links to the town center and the John Manjiro Trail. It is important to consider what new uses in Fairhaven Center might support redevelopment efforts in the Harbor, as well as to assure that linkages to existing tourism and recreational sites, such as small scale lodging and restaurants, are maintained and strengthened.

The realization of connections between these regional opportunities and the waterfront should include investigations into the collective impact and opportunity for coordinated efforts. Connecting waterfront opportunities to important developments outside the immediate area are important, and can accelerate Harbor redevelopment efforts. The following types of connections should be made to capitalize on regional plans and investments that have significant implications for the New Bedford-Fairhaven Harbor.

DEVELOP INTERMODAL LINKAGES



New Bedford should reclaim its historic role as a transportation center for Southeastern Massachusetts through the creation of a vital, intermodal transportation network that serves the needs of both industry and tourism. Before the days of the automobile, New Bedford was known as the gateway to Cape Cod and the Islands. People came by train,took the electric trolley to the docks, and continued their journey by boat. Unfortunately, today those connections have been severed.

A key way to knit the harbor's redevelopment efforts together is a coordinated intermodal strategy. The strategy is applied towards proposals in the following plans that address the airport expansion, development of commuter rail service, dredging of the Harbor to accommodate larger ships, and expansion of ferry service to the islands. Each of these investments should be integral to harbor redevelopment.

A vision of how these systems can be connected through the downtown and central waterfront areas is key to successful redevelopment efforts. The emphasis should be on strategies that link the transportation network to key harbor development sites that will become catalysts for private investment.

The New Bedford/Fairhaven Harbor is fortunate to have strong transportation connections to the rest of the region. Substantial air, rail, highway and water transportation infrastructure has allowed easy transport for industrial goods and products from the area to markets throughout the region and world. New investments in transportation systems could, if properly planned and interconnected, result in an intermodal system that will be a major asset to harbor redevelopment efforts.

■ Transportation Networks

Air

New Bedford Airport is a medium sized airport located two miles from the Harbor. It is owned and operated by the city and provides both private and commercial flight service. Plans for an expansion of the airport's runways from 5,000 to 8,000 feet will increase the airport's potential scale of operation. This improvement will allow the airport to take on larger cargo operations and increase airline passenger service. Harbor related industry is likely to directly benefit from the expansion through the ability to fly fish and other products in and out of the City directly, avoiding overland transport connections to Providence or Boston.

Although an active airport will certainly increase the attractiveness of the New Bedford region for employers and residents, its greatest impact is likely to be the potential for expanding warehouse and distribution activities. The importance of multi-modal distributions systems is growing and firms are increasingly seeking sites that offer combinations of truck, rail, airport, and seaport infrastructure.

Rail

Despite New Bedford's location along the Old Colony Railroad lines that provide regional connections, rail service has significantly declined in the city over time. Nevertheless, rail lines service the waterfront and terminate near the site of the former depot north of Route 6. In addition to this line, there is a rail spur that runs south to the State Pier and on to the former Commonwealth Gas and Electric Company site.

The redevelopment of commuter rail service between New Bedford and Boston is now being planned by the State and will reestablish the importance of the railroad for the region. As described later in this section, the MBTA proposal will require the redevelopment of the depot site for passenger facilities and parking in order to support the commuter passenger traffic expected.

Highways

The New Bedford/Fairhaven region is well served by an excellent highway system that offers strong connections through local communities and the greater region. Interstate-195 runs across the two communities about two miles north of the central waterfront. Direct highway links are provided to Providence to the west and Cape Cod to the east. Links to Boston and the southern suburbs are possible via Routes 140 and 24.

In contrast to the convenience for the region offered by the interstate system are the disconnections created by Route 18 that runs along the New Bedford side of the Harbor between I-195 and the city's South End. Although it was intended to link the Interstate to commercial interests and the South End, Route 18 has become a significant barrier to both pedestrian and vehicular connections between New Bedford's waterfront and downtown area.

Water

Currently, ferry service between the New Bedford/Fairhaven Harbor and the Islands is limited to the *Alert* that runs year-round between Fisherman's Wharf to Cuttyhunk Island and the *Schamonchi*, running from a site south of the hurricane barrier to Martha's Vineyard during the summer season. Consolidating services at a site in the Inner Harbor are key to realizing the potential of expanding and improving the service.

HARBOR SUBAREA PLANNING

Harbor subarea planning can apply the four key strategies towards the redevelopment of New Bedford's harbor. *The New Bedford-Fairhaven Harbor Study Briefing Book* demonstrated that looking at the harbor in terms of subareas is the key to organize future redevelopment planning efforts. Each subarea groups together sites with common characteristics and needs. The subareas suggest themes for harbor redevelopment and

provide an important focus for planning efforts. Detailed investigation into each sub-area has revealed opportunities and constraints to redevelopment. The following descriptions include an overview of the existing conditions and key issues facing each subarea. The boundaries of the six subareas below are identified in **Figure 4-5**:

■ Harbor Subareas

The Urban Waterfront

This subarea includes that portion of New Bedford's waterfront abutting and including the Waterfront and Central National Historic Districts, from Route 6 south to Merrill's Wharf. This area suffers severely from the current configuration of Route 18, which separates the waterfront from the downtown area of New Bedford, severely constrains pedestrian connections to the harbor, and makes vehicular circulation within the area difficult. This sub-area contains two significant underutilized parcels - the State Pier and the Commonwealth Gas & electric site, both of which represent important development opportunities.

The Harbor Terminals

This subarea includes the waterfront industrial areas north and south of the Urban Waterfront Sub-Area on the New Bedford side of the harbor and represents the center of the maritime industry's processing, warehousing and distribution activities. The 30 acre South Terminal area features off-loading facilities for the commercial fishing industry, fish processing plants, and warehouse/storage facilities. The larger North Terminal area hosts many active fish processing and cold storage and warehousing uses, the area contains several undeveloped sites, including the former Railroad Depot site and the abandoned Herman Melville Shipyard.

Open Space and Recreation

This subarea includes multiple, largely undeveloped sites with the potential for use as open space or recreation. These include the Hurricane Barrier, the Standard Times Field, Palmers, Crow, and Marsh Islands, and the Fort Phoenix State Reservation and Beach. Currently there is very little public access and use of the waterfront surrounding the harbor.

The Commercial Islands

This subarea identifies isolated pockets of marine commercial and support activity, including the northern half of Pope's and Fish Island and the marine service areas of the Fairhaven waterfront, which lend themselves to coordinated planning. Parcels within this planning Sub-Area are almost all privately owned. While the piers and wharves along the Fairhaven waterfront are well utilized, many sites on Pope's and Fish Island are underutilized or suffer from substantial vacancies.

The Mill Zone

This subarea contains two 19th century mill districts which sit like bookends on either end of the New Bedford working waterfront. Substantially underutilized or vacant at the present, re-use of these old structures is problematic due to the high cost of adaptive re-use. Because they are outside the DPA boundary, there is more flexibility with regard to future land uses than with other sub-areas, however transportation access is less direct to and from these mill zones than with many other sub-areas within the harbor.

Residential Waterfront

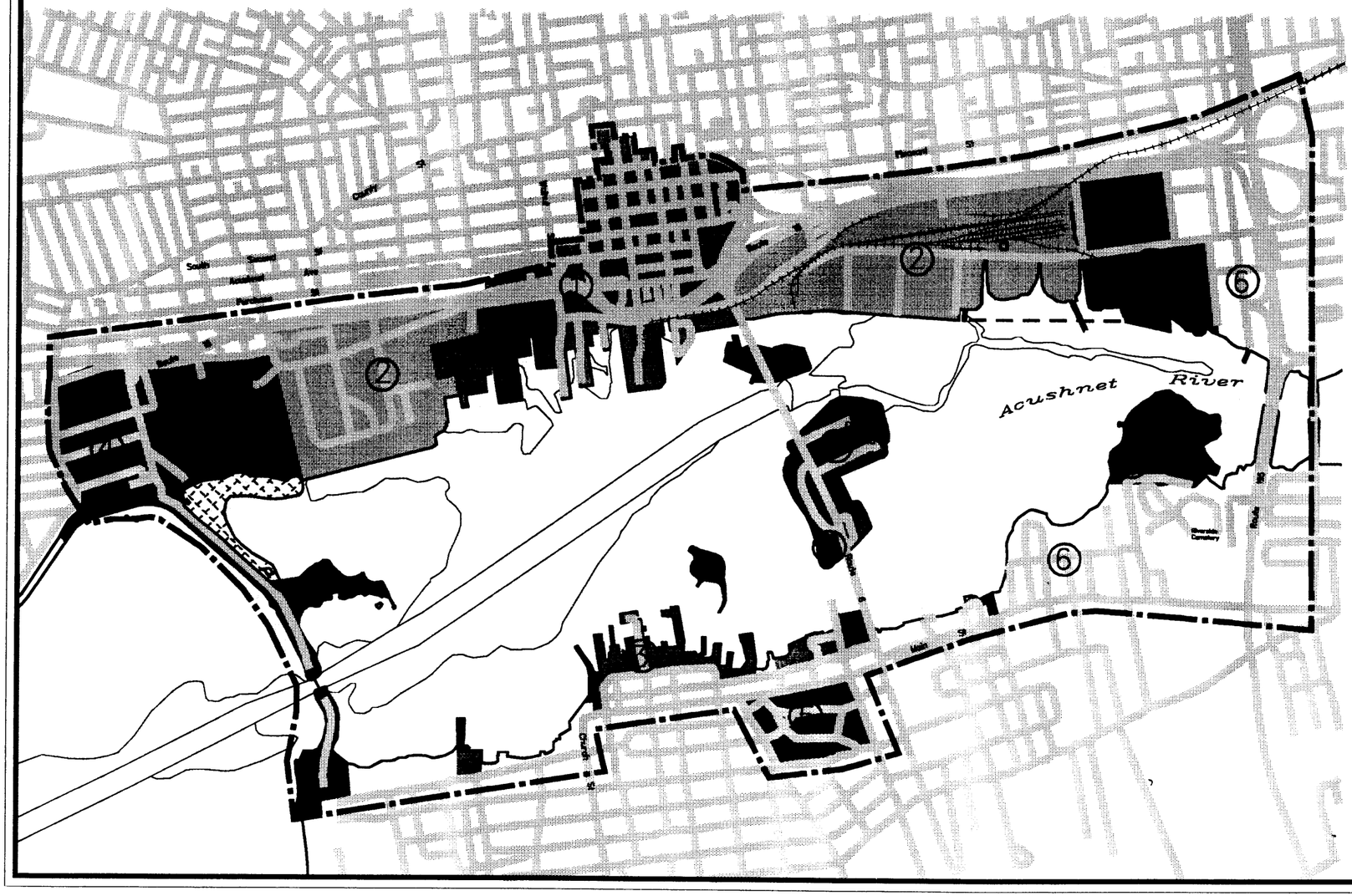
This subarea includes the remaining portions of the Harbor shore, most of which lie on the Fairhaven side of the Harbor. These areas are largely low-density residential neighborhoods and do not present major land use conflicts. Strategies should focus on conserving and improving these neighborhoods in conjunction with new recreational and open space amentities.

■ Plans for the Key Subareas

Plans for the Urban Waterfront, Harbor Terminals, and Open Space and Recreation Subarea are offered in Chapters Five, Six and Seven. A brief summary of the existing conditions and important issues for the Commercial Islands, Mill Zone, and Residential subareas are offered in Appendix I.

The three subarea plans apply the four strategies identified towards harbor redevelopment. As the key areas of activity along the New Bedford-Fairhaven waterfront, these three subareas illustrate the potential for a mix of uses to revitalize the harbor. The contents of the Urban Waterfront, Harbor Terminals, and Open Space and Recreation plans include an assessment of existing constraints and opportunities followed by a series of proposals, and finally an implementation strategy.

Figure 4-5
Sub-Areas of Study



LEGEND

- 1. Urban Waterfront
- 2. Terminals
- 3. Commercial Islands
- 4. Mill Zone
- 5. Open Space/Recreation
- 6. Residential
- Planning Area Boundary
- Potential Dredge Disposal Site

Sources

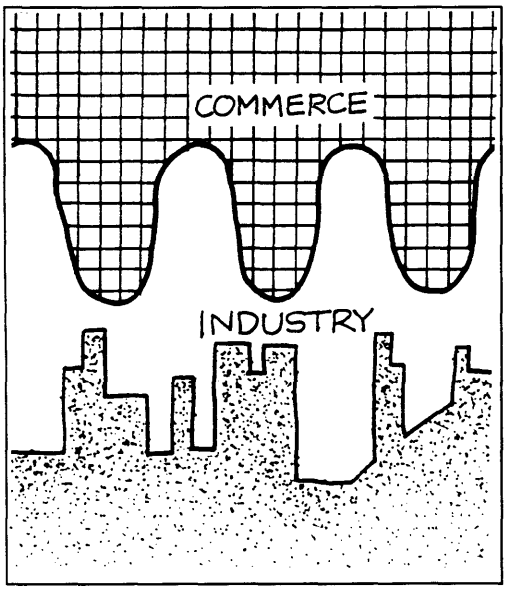
Buildings and Parcels: City of New Bedford digital data.
Water Depths: NOAA Nautical Chart, 1993 (1:20,000).
Transportation-New Bedford: City of New Bedford digital data.
Transportation-Fairhaven: MassGIS digital data, 1980s (1:100,000).

N

0 625 1250 1875 2500

SCALE IN FEET

5 THE URBAN WATERFRONT PLAN



The Urban Waterfront Area remains the heart of the New Bedford side of the Harbor. The area is the oldest developed portion of the Harbor and contains many historic resources. **Figure 5-2** illustrates the area which extends from Route 6 to the north; includes the northern portion of the Commonwealth Gas and Electric site on the south; the Acushnet River and Harbor on the east; and the Waterfront and Central National Historic District on the west. Now cut into two distinct pieces by Route 18, this area was once a seamless waterfront community, supported by Harbor activities. Today, the Urban Waterfront Area remains the center of New Bedford's cargo shipping activities and troubled commercial fishing industry.

Revitalizing maritime industries while developing the interpretive potential of the Urban Waterfront will involve striking a balance between key interventions and the conservation of existing uses. Unlike re-created interpretive ports, such as Mystic, that are static attractions, New Bedford's port is still alive and evolving. Today, the Urban Waterfront continues to provide shelter for a traditional fishing and shipping industry, as it has for over 100 years. Though many of the remaining historic waterfront resources are at risk in this industrial landscape, the ongoing activity of the traditional fishing and cargo trade offers a rare opportunity to observe and learn about industry on New Bedford's waterfront.

The redevelopment plan for this subarea emphasizes the idea that tourism and industry are compatible along a working waterfront. As traditional fishing industries in the area continue to struggle, the following Plan creatively balances the needs of both industry and tourism to create a dynamic, interesting and economically prosperous Urban Waterfront.

The chapter begins with background information on the context, history, land use, ownership and utilization of the Urban Waterfront area. Subsequent sections of the Plan then offer key redevelopment proposals. Three proposal themes, as identified in **Figure 5-2**, are offered. The emphasis in these proposals is on improving the commercial fishing trade, expanding cargo operations and introducing tourism along the Urban Waterfront. Key projects include:

State and Fishermens Pier: The Marketplace and Trade Port --Proposals are offered for expanding cargo operations at State Pier, cre ating an International Marketplace and constructing a state of the art Fish Display Auction and Market on Fishermen's Pier.

Coal Pocket and Steamship Pier: The Whaling Port -- New uses are offered to reactivate these historic and underutilized piers. Commercial businesses and interpretive activities are proposed for Coal Pocket Pier, while Steamship Pier is restored to its historic role as the staging point for ferry service to the Islands.

Linkages -- These proposals are really the thread the stitches together the previous two proposal themes. Through the creation of a harbor boulevard, harbor taxis and a waterfront walk, access and circulation is improved for both industry and visitors alike to the Urban Waterfront.

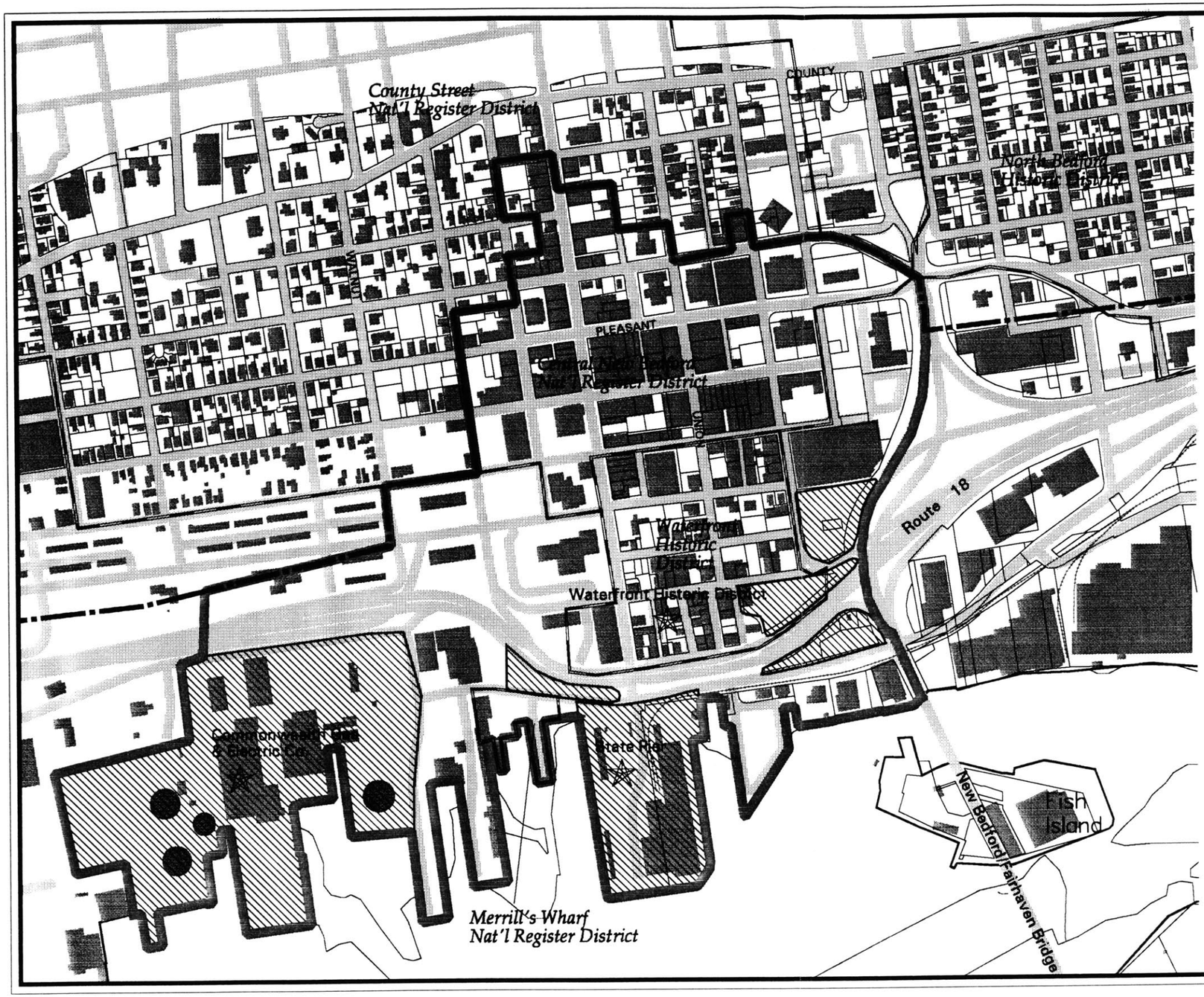
Following the description of these proposals, an implementation strategy is offered. Key actors, regulations and financial instruments are identified that should play important roles in shaping a sustainable and prosperous Urban Waterfront.

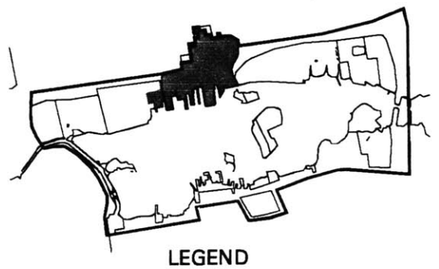
BACKGROUND

■ History

The Urban Waterfront has rich interpretive resources that should be protected and expanded. The early development of the Urban Waterfront Area began in the area presently designated the National Waterfront Historic District. This area was characterized by Herman Melville in *Moby Dick* as the colorful commercial center of the whaling community (Clayton and Whitley, 1986). Later, with the decline in

Figure 5-2
Urban Waterfront





LEGEND

- Development Catalyst Sites
- Underutilized/Vacant
- National Register Districts
- Tanks
- Buildings
- Water
- Planning Area Boundary
- Planning Sub-Area Boundary
- Parcel Boundary
- Roads
- Rails

Sources

Buildings and Parcels: City of New Bedford digital data.
Water Depths: NOAA Nautical Chart, 1993 (1:20,000).
Transportation-New Bedford: City of New Bedford digital data.
Transportation-Fairhaven: MassGIS digital data, 1980s (1:100,000).

0 500 1000 1500 2000

SCALE IN FEET

whaling and the development of textile mills, commercial activity began to spread west, up the hill to the area that today is considered the downtown core and includes the Central New Bedford Historic District. The rich history of this area is reflected in its architectural treasures. Most of these structures were built in the mid to late 19th Century and show the wealth and importance of the whaling industry to New Bedford during this time. The residential, civic, and commercial structures include examples of Federal, Greek Revival, Italianate, and Victorian architecture (Boss, 1983).

The Whaling Museum preserves stories and artifacts associated with New Bedford's most romantic period, while an impressive collection of Federal and Greek Revival architecture was saved during historic preservation efforts in the 1960's and 1970's. Many of these have been reused for new purposes.

Despite these conservation efforts, the integrity of the waterfront's urban fabric is increasingly threatened. Urban renewal in the 1960's and 1970's left the area severed from the downtown by Route 18, and early redevelopment efforts left a collection of disconnected commercial structures like the freestanding Wharfinger Building and large, multi-family structures. Subsequently, difficult economic conditions have led to under-utilization and vacancy in portions of the historic area. As a result, this sub-area contains a large number of underutilized buildings, vacant parcels and parking lots that compromise the coherence of the district.

The Urban Waterfront has piers, wharves and docks that have historically been occupied by industrial style buildings and storage sheds. Among these resources is Merrill's Wharf National Register District, a remnant of the 19th century whaling port with its historic buildings and pier structures. Although some of these buildings are in good physical condition with their original masonry facades intact, there are few buildings of architectural or historic significance. Two exceptions are the Wharfinger Building and Coal Pocket Pier.

■ Land Use

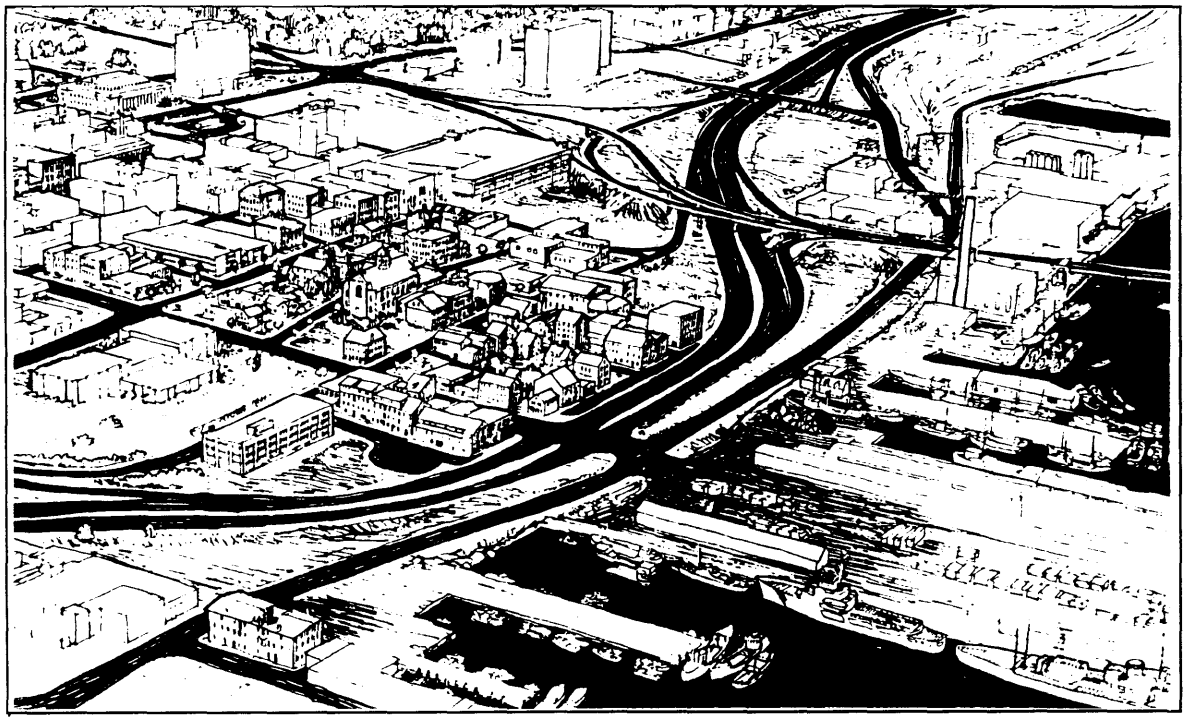
Today, the prevalent land uses in New Bedford's Urban Waterfront are closely related to the needs of the fishing fleet and supporting harbor services. The majority of waterfront sites provide berthing slips for the fishing fleet and parking areas for

surface transport connections. Many of these sites also offer services for the fishing fleet, such as the New Bedford Seafood Co-op located north of the City Piers, and the Crystal Ice Company.

In addition to the sites serving the fishing fleet, additional sub-area sites are used for a number of other uses. These uses include equipment service establishments, as well as commercial and retail uses such as restaurants, coffee shops, bars, and administrative offices. Finally, a few sites are also used for tourism and transportation purposes. The Fishermen's Pier houses a passenger ferry/small-cargo carrier that serves Cuttyhunk Island in a small portion of the pier, while the historic Wharfinger Building on the same pier is the site of the City's Visitor Center and Tourism Office.

The City's downtown district continues to be characterized by mixed commercial, civic, and residential uses. The Whaling Museum is the major attraction in the area and provides not only a draw for tourism, but provides educational services and creates a symbolic link between the historic architecture of the downtown and marine related functions on the waterfront.

Figure 5-3: The Urban Waterfront Today



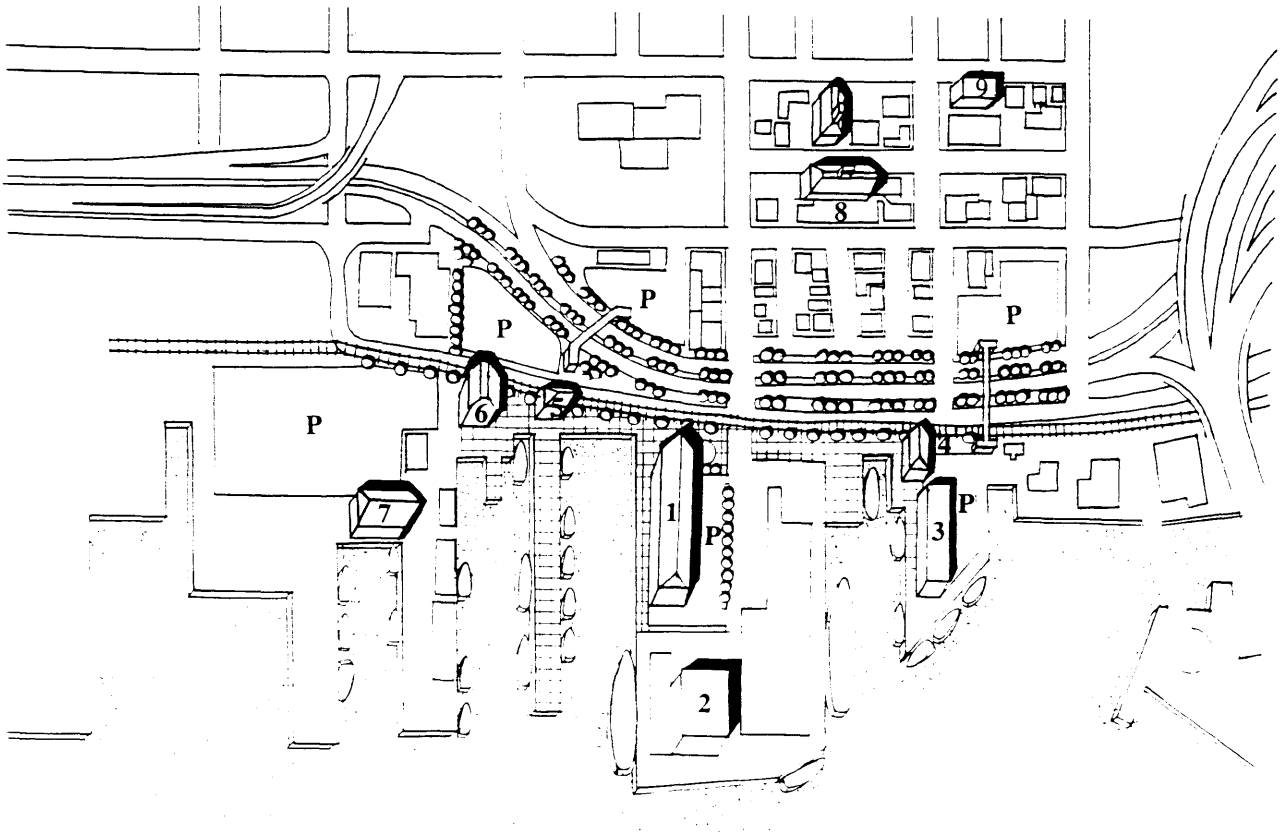
■ Ownership and Utilization

The Urban Waterfront sub-area is composed of parcels owned by the State, the Harbor Development Commission (HDC) and private entities. On the waterfront, the majority of the piers and lots are owned and maintained by HDC. Exceptions are State Pier and Homer's Wharf. State Pier is owned by the State and under direct management of the Department of Environmental Management (DEM), while Homer's Wharf is owned by the Wanchese Fish Company and the Parisi Corporation. In the downtown portion of the sub-area, ownership is also varied and includes various public and private entities.

Figure 5-4: Ships in the Harbor

Vacancy and under-utilization of properties is an increasing problem throughout the sub-area. Many of these sites contain obsolete structures, most notably the old Commonwealth Gas and Electric Site. At the same time, many properties are substantially underutilized, such as the Merrill's Wharf Building, which was redeveloped in the 1980's as an inn and restaurant that has since been closed. Much of State Pier and the Fishermen's Pier are used for parking or open storage. Similarly, declines in the City's economy have left many downtown commercial buildings vacant or underutilized.

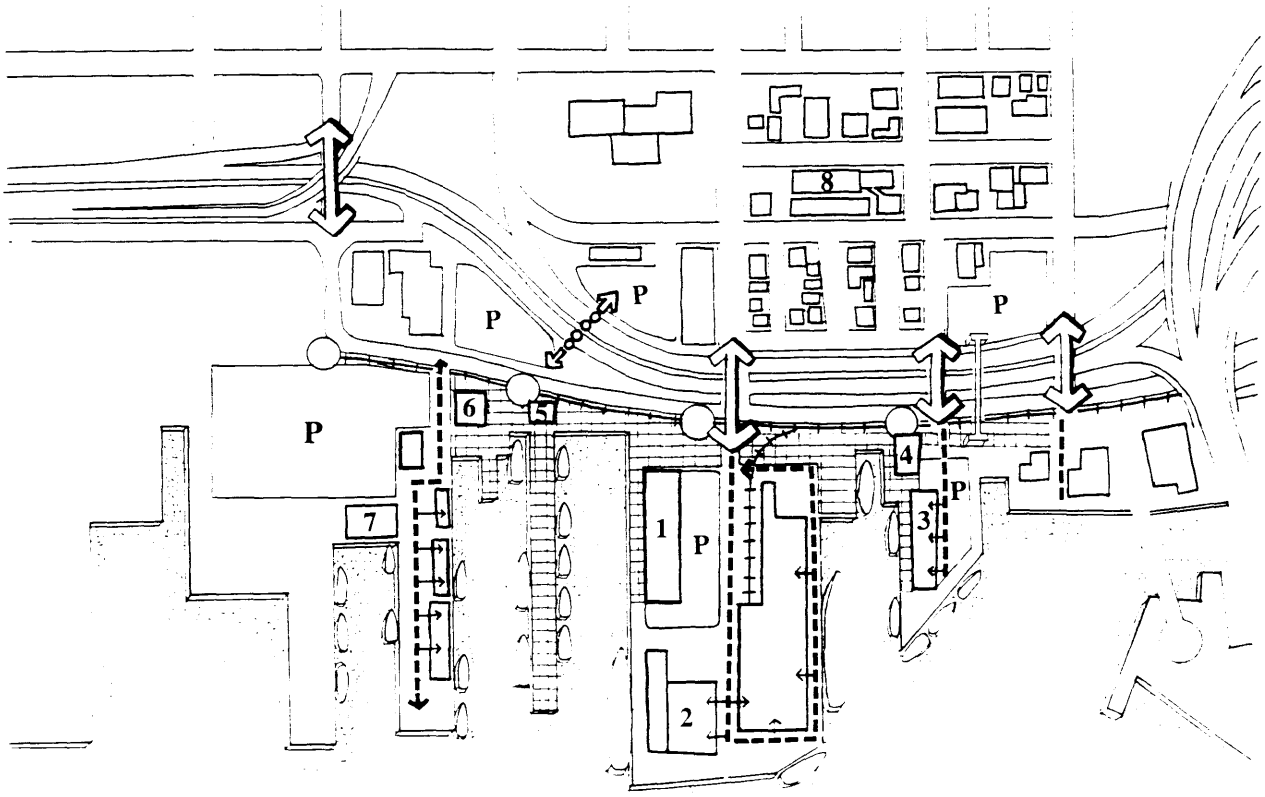
Figure 5-5: URBAN WATERFRONT PROPOSALS



LEGEND

- Public Access
- P Parking
- 1 Intl. Marketplace
- 2 Cold Storage Cargo
- 3 Fish Auction-Market
- 4 Wharfinger Bldg.
- 5 Ferry Staging Center
- 6 Counting-House
- 7 Twin Piers Bldg.
- 8 Whaling Museum
- 9 Visitor Center

Figure 5-6: URBAN WATERFRONT ACCESS AND CIRCULATION



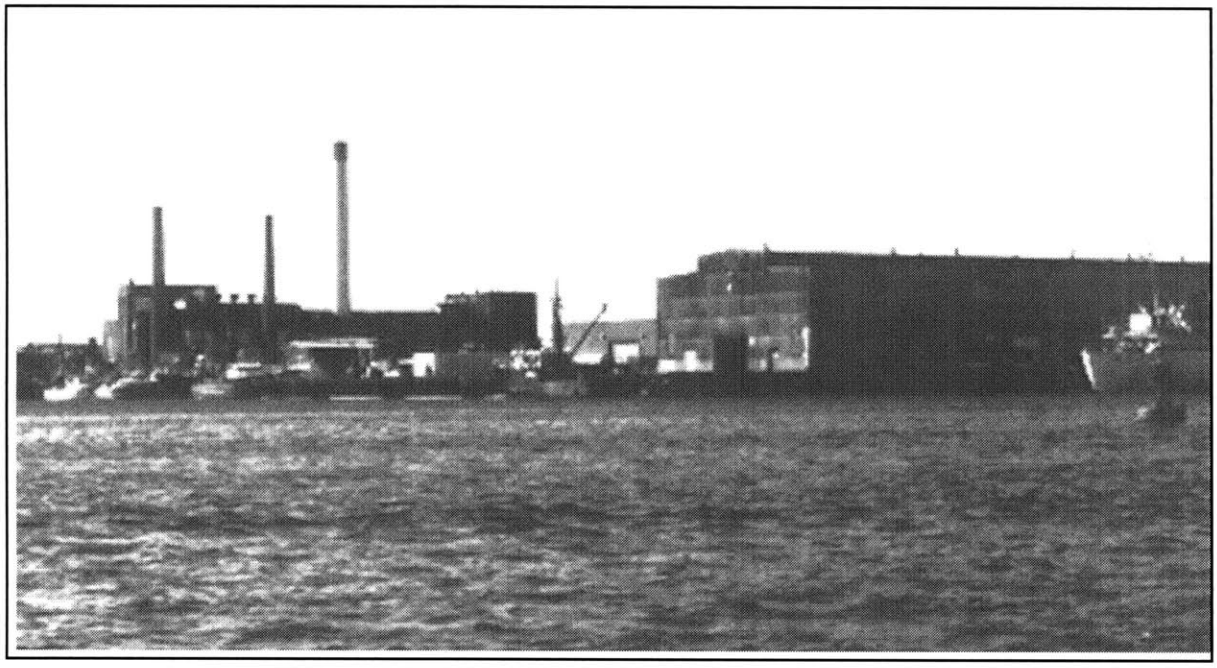
LEGEND

- Public Access
- Improved Intersection
- Industry Access
- P Parking
- Harbor Trolley Stop
- Pedestrian Crossing
- 1
- 2 Cold Storage Cargo
- 3 Fish Market-Auction
- 4 Wharfinger Building
- 5 Ferry Staging Center
- 6 Counting House
- 7 Twin Piers Bldg.
- 8

URBAN WATERFRONT PROPOSALS

The following key proposals apply the concepts of mixed-use development and improved connections to sites throughout the Urban Waterfront. The **Marketplace and Trade Port** offers a vision of expanding cargo operations and improving coordination within the commercial fishing sector on **State and Fishermens Pier**. The **Whaling Port** that follows offers reuse proposals for the historic **Coal Pocket and Steamship Piers**. And finally, the **Linked Urban Waterfront** ties these two areas along the waterfront together through a harbor boulevard, harbor trolley and waterfront walk.

Figure 5-7: Harbor View of State Pier



■ State and Fishermens Pier: The Marketplace and Trade Port

New Bedford's traditional harbor economy has been built on fishing, processing and shipping. These trades continue to define the working waterfront and have enormous latent interpretive potential. Revitalizing the harbor economy should recognize the mutual benefits possible of "opening up" the cargo and fishing operations to tourists. Through redevelopment efforts that link improvements to the fishing and cargo

operations with marketplace activities, these traditional harbor industries can remain vital and prosperous, while visitors can really see a working waterfront in action. The following strategies of **expanding cargo operations at State Pier**, creating an **International Marketplace** and the construction of a state of the art **Fish Display Auction and Market** on the adjacent Fishermen's Pier represent key interventions to create a more sustainable fishing and shipping economy.

Expanded Cargo Operations at State Pier

As a large site, centrally located along the waterfront with pedestrian and vehicular access to the historic resources of the downtown district, the State Pier is a key magnet for future development. A creative development program can take advantage of the pier's strong potential for both expanded cargo shipping and tourism development.

Existing Conditions -- The State Pier is the only general cargo handling facility in the Port of New Bedford/Fairhaven, and one of a limited number of ports in Massachusetts with break-bulk cargo handling capacity (Lewis, 1996). The large facility is comprised of an eight-acre bulk product storage and transfer facility with 1,800 feet of bulkhead berthing space that is located on dredged water depths of -30 feet below mean low water. The importance of the facility is further evident in its capability to handle vessels up to 525' in length at the east end of the Pier. Additional key pier facilities described by HDC include:

- 35,000 and 33,000 sq. ft. transit sheds with truck/rail loading docks• Transit shed includes bonded storage area for US Customs inspections
- Dry Storage capacity of 97,000 sf, and open storage capacity of 24,000 sf.
- Wharfage availability on two sides with 27' berthing depth, 350' and 500' length
- Truck scale and scale house
- 5.5 acres of vehicle parking and maneuvering area with security fence

Currently, the northern half of the Pier is used for off-loading various commercial shipping lines, while the 700' long south side of the Pier is under long term lease to the US Coast Guard. It is used as a base of operations for four 275' US Coast Guard cutters and minor servicing operations. Since the elevation of the existing pier deck is too high for use by vessels in the commercial fishing fleet, the facility is also

available for use by municipal service and non-profit organization vessels, such as research ships (Manley, 1996). Additional important points concerning the pier utilization include:

- Wharfage and cargo handling for 2-3 vessels per month, including general cargoes and fruit
- In-transit and long term storage
- 20,400 sq. ft. of interior transit shed space leased to five entities for in-transit and long-term storage

Expanded Cargo Operations -- Since the State Pier is the only general cargo handling facility in the Port of New Bedford/Fairhaven with break-bulk cargo handling capacity, this use of the facility should continue. Cargo handling is not vulnerable to the cycles of the fishing industry and is, therefore, an important source of sustainable marine related revenues.

The expansion of cargo operations at State Pier will need to be strategic. Since the shipping business is very competitive, New Bedford should remain focused on niche cargo. With strong market demand for handling and storing high-value, perishable cargo requiring refrigeration, the State Pier can become a facility that complements the cargo shipping and distribution activities in the Marine Terminals.

With Seaport Bond Bill funds dedicated towards increasing publicly owned freezer space in the harbor, the State Pier represents a significant development opportunity for cold storage that can support more storage of perishables. Through constructing afacility on the eastern end of the State Pier, businesses such as Maritime Terminal will be able to increase their trade activities (Taylor, 1996).

Additionally, Seaport Bond Bill funds earmarked for State Pier improvements should emphasize improving storage facilities and the intermodal connections. If the potential to re-establish rail connections to the Pier and truck circulation is realized, the use of the State Pier facilities will be enhanced.

In addition to developing cold storage to expand the shipment of perishables, improved warehousing facilities at the State Pier would allow the facility to also

handle break-bulk cargo of components for the proposed marine science technology industry cluster, as well as other special cargo.

International Marketplace

The underutilized southwestern side of the State Pier offers a key opportunity to develop tourism-maritime commerce related activities that capitalize on the shipping activities at the State Pier. The key for realizing this initiative is not to disturb Coast Guard activities already present. The US Coast Guard still has 23 years left on its lease for State Pier. The solution to this dilemma is a limited intervention that capitalizes on the activities on the Pier and potential for cruise ship berthing.

The concept for the International Marketplace Terminal is the construction of an approximately 50,000 square foot mixed-use building and surrounding public gathering area. The facility can be used as a cruise ship terminal, a showroom for duty-free goods imported to the State Pier, and an international trade interpretive center that explores the rich maritime trading history of the port.

By locating the Marketplace Terminal in the southwestern corner of the State Pier, Coast Guard activities and cargo operations will not be seriously disturbed. As illustrated in **Figure 5-5**, the marketplace will have a parking lot on the northern side of the building that can be shared with the operations on this side of the pier. With a 50' setback from the pier, the waterside of the Marketplace building will be developed as a public gathering area that can also provide access to cruise ships that dock at the pier.

The duty-free showroom for international goods could take advantage of the incentive offered by designating the State Pier as part of New Bedford's Foreign Trade Zone (FTZ). With foreign trade zone designation, it is possible to exhibit imported merchandise for sale without paying duty on it. No customs duty is levied on the goods while they are on display and stored for sale. A tariff is charged only when the merchandise is sold to a customer and imported into the US Customs territory. Through this incentive, both wholesalers and the general public could be attracted to this facility. Duty free shops could sell consumer items of interest to

tourists or cruise ship passengers, while the exhibit hall could host small wholesale shows of goods ranging from the exotic produce imported from Cape Verde to marine science components displayed in an interesting and informative way.

The Marketplace Terminal will further the interpretive experience of the waterfront through exhibits that explore New Bedford's rich trading past of the harbor. The community's cultural character is strongly shaped through historic trading ties with Portugal and Cape Verde that continue today. Exhibits that explore New Bedford's cultural heritage in the context of trade today with these international destinations can effectively celebrate the community's cultural diversity and active international trading ties.

The Fishermen's Pier Fish Auction and Market

A key to establishing a more sustainable fishing industry in New Bedford is the development of a fish market and electronic auction. The facility described below could help coordinate and modernize the operations of the local commercial fishing industry, while also exploiting the interpretive potential of this interesting industry.

Background -- A fish exchange is a display auction with limited refrigeration for day storage. Similar facilities are designed to handle both buyers and sellers by offering the following advantages: consolidation of trades that reduces the transactional costs for wholesalers and suppliers; efficient market clearing that reduces the time between buying and selling; reliability of supply and quality incentives; and unbiased pricing. The auction services would include: off loading, sorting, boxing, and icing; temporary warehousing; auction/clearing transactions; trucking; and product promotions.

In addition to the display auction on-site, the exchange would be electronically linked to the Portland Exchange, which is a large, established operation. Similar to other exchanges in the United States, this capability would enable buyers to clear their transactions on either, or both, exchange in the desired time frame of their purchase and delivery requirements. The advantage to the supplier is that it offers more opportunity for uniform pricing of comparable product. By facilitating

information sharing, the system also would induce greater coordination of fish marketing region wide.

According to the GIC Trade Consultant Group, New Bedford possess the key factors for success. The fish species caught represent a large number of "medium" and "high" value species that would be attractive for an auction. The consultants explain that with New Bedford's high volume of medium and high value fish, an auction in the community would not have to reach as high a level of activity to be profitable as a port that brings in a greater quantity of lower valued fish.

The physical requirements for a successful auction include blast freezer storage; short-term cold storage; an auction room; display floors; and administrative offices. Strong siting advantages to consider include a connecting pier for easy and direct unloading. As a facility with auction and display rooms, wholesalers and consumers alike participate in the commercial fishing trade.

Benefits to the Community -- An electronic display auction offers advantages over the previous private auction system of the New Bedford Seafood Exchange in South Terminal. Many claim that one reason for its failure is that the system is arbitrary and subject to manipulation. A study on Amendment 5 identified "price-fixing and price-cutting as a way of life" in this former exchange (NEFMC, 1993).

Beyond improving trading practices, another incentive for establishing a display auction in New Bedford is that it will raise the value added activities in the port. Traditional harvesting of fresh fish is a very low value added activity with minimal returns. Due to the declines in the fishing industry, a display auction can play a key role in creating product differentiation and leading to the development of other support services in the harbor, such as volume freezing and frozen block storage; distribution; and fish preparation. The services related to a display auction can lead to value added activities and lead to innovations and increased revenues to the industry (GIC Trade, 1994).

The Exchange is also likely to become an important source of revenue for supporting services. The auction process requires services and generates fees for receiving,

icing, grading, stocking, and truck deliveries. If electronic trades of futures contracts are permitted, they will also generate revenues on transactions.

Location Issues -- The site of the former fish auction in South Terminal is inadequate for redevelopment. The facilities do not meet the needs of a modern exchange and the poor location has no potential to develop interpretive potential. The $500,000 in the Seaport Bond Bill funds will enable the creation of a more useful facility. Unfortunately, the current direction is towards spending money on redeveloping the current facility, or locating the auction on the north side of Fish Island. Both choices are poor because they have no potential to successfully link with waterfront attractions that can develop the interpretive potential of a related fish market.

Siting Considerations for the Fishermen's Pier -- An ideal site for the fish market will be Fishermen's Pier. Already tied to all sides of the pier are some of the boats that make up New Bedford's famous fishing fleet. Also, the site itself is interesting and with its current use as a surface parking lot, it is severely underutilized. Originally, the Fishermen's Pier was two piers-- Pier #3 and #4 and served a variety of vessels, from early whalers in the 1800s to modern fishing draggers and scallopers in port today.

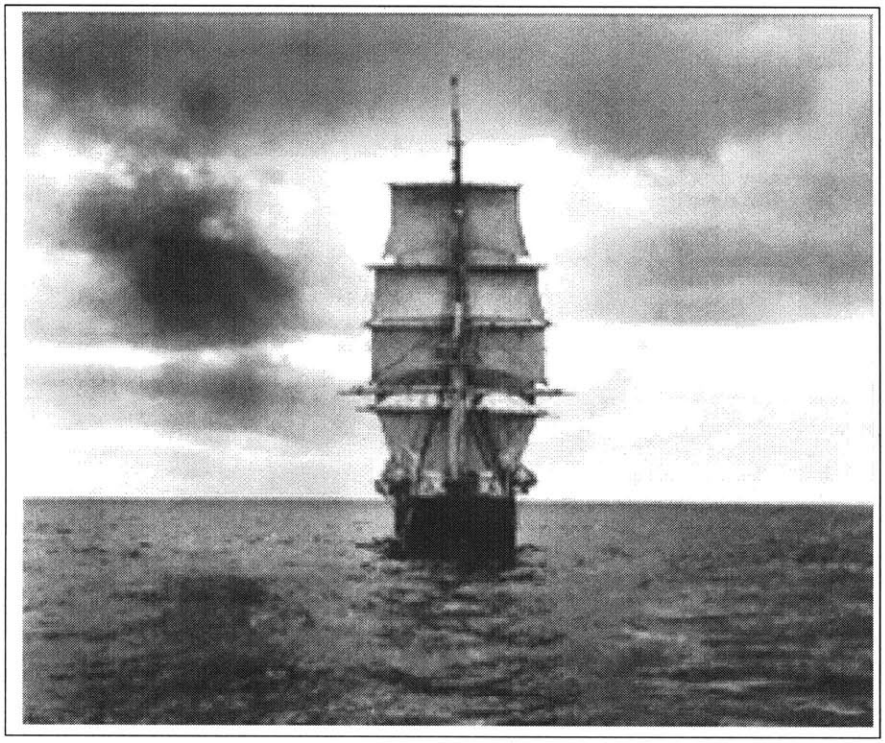
This site represents an excellent opportunity to become a fish display auction and related market. Both commercial fishing auction functions and tourism will realize mutual benefit. Commercial fishermen will benefit from the revenues generated by an on-site market and display auction tours, while visitors will benefit from the potential to understand the process of the contemporary commercial fishing trade. The development will follow the vision of Seattle's Fishermen's Terminal that successfully reveals the netting and other functions of commercial fishing to visitors, rather than separating these functions, such as the case at the Fulton Fish Market in New York.

The imagined siting of the building illustrated in **Figure 5-6** would be oriented towards the southern portion of the pier. The two or three story building will accommodate the administrative offices and some of the displays on the higher

floors, while the cold storage facilities and auction room will be at the ground level. A 100' foot setback from the pier will become a staging area for transporting the fish from boats and a festive boardwalk environment for pushcart vendors and visitor seating. The backside of the building on the north will be for truck staging and supporting parking. Finally, an important pedestrian connection will be developed to the International Marketplace Terminal to the south on the State Pier.

The new use for Fishermen's Pier will require addressing the displacement of existing parking spaces and long term berthing. Lost parking will be compensated through the creation of a lot along land reclaimed from the Harbor Boulevard effort. Since the new use of the site will require adequate transient berthing space along the perimeter, some vessels will need to relocate to other docking facilities in the harbor.

Figure 5-8: *Wanderer*, the last whaleship to leave New Bedford



■ Coal Pocket and Steamship Piers: The Whaling Port

The Coal Pocket and Steamship Piers comprise the Merrill's Wharf National Register District. These finger piers and the adjacent Bourne Counting House were the historic center of the whaling trade, and today remain the last vestiges of New Bedford's historic waterfront. With the possible designation of a National Park in the historic downtown area, this portion of the Urban Waterfront should be developed as a major historic waterside complement to other tourism based attractions.

Offering a central, accessible location, the Coal Pocket and Steamship Piers are well situated to have interpreted their rich histories as centers for whaling and steamship traffic. The following key proposals are offered for the piers:

- The Whaling and Steamship Interpretive Center
- Whaling Trade Interpretation at Coal Pocket Pier
- Passenger Ferry Staging at Steamship Pier

The Whaling and Steamship Interpretive Center

The redevelopment of the massive granite block Bourne Counting House as a mixed-use commercial and interpretive center should be the cornerstone of the restored Steamship-Coal Pocket Pier. The building is identified for inclusion in the proposed National Park, yet its use has not been considered. The Bourne Counting House is a large building that can accommodate a number of complementary uses. The ground floor should be redeveloped for a restaurant and interpretive center, while the higher floors should be re-established as a waterfront inn.

The Counting House will be an interpretive center for the whaling ship and steamship exhibits, but will not duplicate the Whaling Museum resources. The center should be a place to orient visitors to the attractions of the Register District and to prepare them for further exploration of other points on the working waterfront. The building would also serve as a stop along the harbor trolley line, as well as a staging point for the ferry service to the Islands and the harbor taxis.

Adjacent to the Bourne Counting House and between the historic Coal Pocket and Steamship Piers, is the small, unused Waterfront Park that should be redeveloped as a public gathering space for surrounding attractions. A bricked stepped plaza could support a range of activities, including performances, outdoor dining and pushcart vendors. Artifacts and activities could allow visitors to become directly involved in the history and experience of whaling and riding in coastal steamships.

Whaling Trade Interpretation at Coal Pocket Pier

The key whaling attractions will be developed on the Coal Pocket Pier. This historic short, finger pier was once the receiving point for the thousands of casks of whale oil during the whaling days. During this time, the pier supported tall containers or 'pockets' where coal was received and stored before being shipped out by wagons, and later trucks. Today, the Pier is used for berthing fishing and lobster boats, but, it is increasingly underutilized.

In addition to bringing back whaling casks and barrels to the pier and vendor pushcarts, a whaling ship should be berthed at the pier. Presently, Fairhaven's John Howland Foundation is actively seeking funds to rebuild the historic whaling ship USS John Howland. The Coal Pocket Pier would be the ideal location for the restoration and permanent berthing of this vessel.

Figure 5-9: The Bourne Counting House Today

Passenger Ferry Staging from Steamship Pier

Historically, Steamship Pier has served as the staging point for ferries between New Bedford and the Islands. For nearly 150 years, the historic pier served as a terminal for ferries operating between New Bedford, Martha's Vineyard and Nantucket. In the heyday of steamers (1891-1933) a fleet of more than a dozen regularly docked at New Bedford. Although service improved in the 1940s with the introduction of 'blunt' nosed vessels that improved service and lowered costs, Woods Hole slowly became the more popular staging point, until the service from Steamship Pier ended in 1961 (Clayton and Whitley, 1986).

The Steamship Pier should be re-established as the staging point for passenger ferry service to the Islands and the harbor taxi service. Currently, ferry service to Marha's Vineyard, Nantucket and Cuttyhunk Island are provided by two different vessels at disconnected locations. Steamship Pier is presently the home to fishing and lobster

boats, however, significant declines of vessels in the harbor will likely leave the pier underutilized in the near future and available for a new use.

Because of its important historic role and finger pier design, Steamship Pier is included on the National Register of Historic Places. Although it was rebuilt and doubled in length in 1979, its narrow, finger pier length have compromised its potential for the fish processing operations that occur on other piers, such as Merrill's Wharf.

Despite the constraints for marine industrial uses, Steamship Pier would be ideal as a passenger ferry and water taxi terminal. The reconstruction of the pier has strengthened it considerably so that it can support structures on it (Manley, 1996). Through construction of a terminal at the east end of the Pier, ferry boats to the Islands and harbor taxis would have a central facility that can also accommodate the needs of the remaining fishing boats. In addition to providing ticketing and administrative space, the terminal could also include interpretive exhibits on New Bedford's historic steamship past.

Expanded and Consolidated Passenger Ferry Service-- Along with interpretive exhibits to explore the history of Steamship Pier, the Pier should be re-established as the waterside transportation staging point. The following descriptions explain the staging role that Steamship Pier can play for both ferry service between New Bedford and regional tourism attractions at Martha's Vineyard, Nantucket and the Elizabeth Islands. A key aspect to successfully consolidating ferry services in the Inner Harbor will be adequate parking. A shared, landscaped parking lot immediately west of the Coal Pocket-Steamship Pier area, as illustrated in **Figure 5-5**, could be shared with adjacent attractions and offer the advantage of convenience to ferry passengers.

The Alert II is a small vessel presently docked at the Fishermen's Pier. It provides year-round service to the picturesque Cuttyhunk Island, 14 miles away. Relocating the Alert II to Steamship Pier will solve the congestion that will result from a fish display auction and market at Fishermen's Pier and the increased cargo operations at the adjacent State Pier.

The Shimonchi is presently docked just south of the Hurricane Barrier. Currently, the passenger ferry is the only passenger service between New Bedford and Islands. It runs once a day year-round. The current terminal site is nearly one-mile away from the central waterfront at an undeveloped, deteriorating site. Through re-locating the vessel at Steamship Pier, the Shimonchi will be linked to attractions in the central waterfront

If the *S.S. Nobska* is restored at docked at Steamship Pier, it has the potential to be a major attraction. After its restoration, the 70 year old coastal steamer will be the only coastal steamer in service in the country. This compares to the 3,800 steamers in service when the Nobska was constructed in 1925. The ship is listed on the National Register of Historic Sites and will resume the original route of the steamer between New Bedford-Martha's Vineyard-Nantucket during the tourist season. Since car service to the islands is presently not possible, the Nobska's vehicle and animal decks will be converted to a large museum and dining rooms.

■ Linking the Urban Waterfront

Improving public access to and along the waterfront is another important element of revitalizing the Urban Waterfront. As a complement to the open space linkages described in the Open Space and Recreation Plan are access improvements within this subarea that improve connections along the waterfront and to the downtown, while also allowing visitors the opportunity to view the activities of a working waterfront.

The following efforts focus on improving access to create a dynamic, active waterfront that improves connections to downtown New Bedford and increasing public exposure to the water, while recognizing the limits to access created by active industry. These strategies include improved waterside access through **Harbor Taxis**, the **Waterfront Walk**, a **Harbor Trolley** and the redesign of Route 18 as the **New Bedford Harbor Boulevard** to connect the waterfront and historic downtown.

Harbor Taxis

A tourism related waterside transportation to establish in New Bedford are Harbor Taxis. Although these "taxis" will be berthed at various places within the harbor, the administrative and ticketing office should be shared with the passenger ferry terminal at Steamship Pier. The harbor water taxis will provide two types of "access":

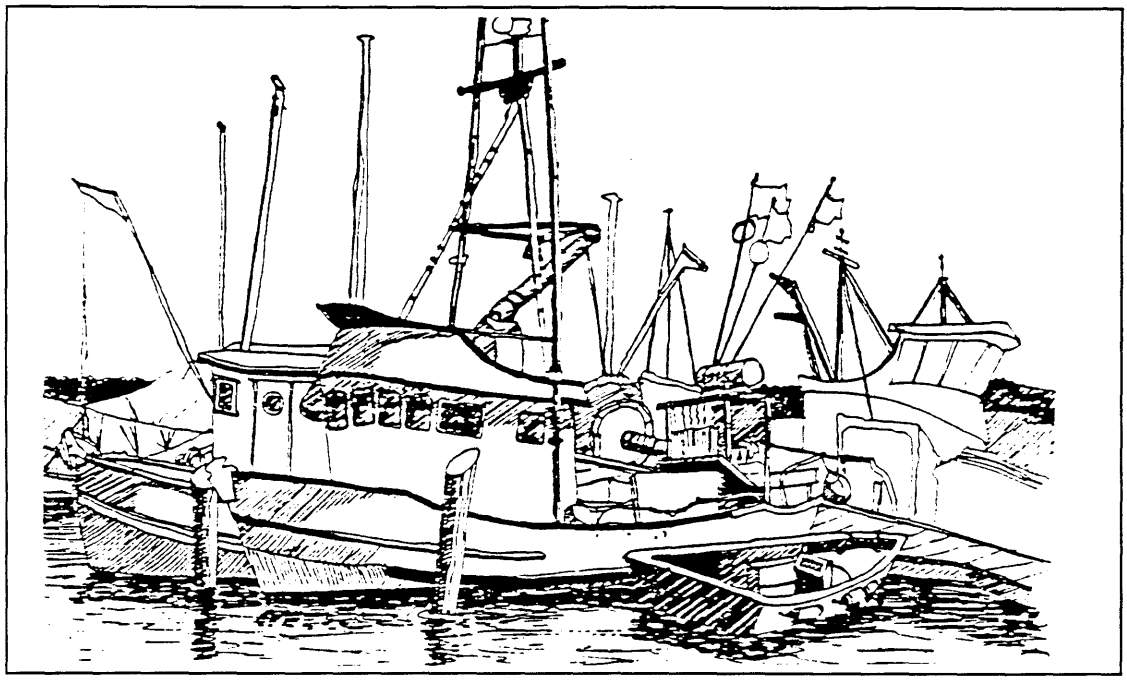
- visual access to the historic piers and structures, as well as the opportunityto view active industry
- direct pedestrian access to various attractions along the waterfront.

The harbor taxis based on the Steamship Pier will link to waterfront attractions both inside and outside the hurricane barrier. Within the inner harbor, stopping points should include the Pope's Island Marina, Buzzards Bay Aquarium, the Marketplace at State Pier, the Fish Auction at Fishermen's Pier, and the restored Lighthouse on Palmers Island. Outside the hurricane barrier, the taxis could dock at a slip at Fort Rodman. Here, passengers could explore the Center for Marine Sciences, or the adjacent historic Fort Tabor site. Returning to the inner harbor, stopping points on the Fairhaven side should include Fort Phoenix State Park and Recreation Area, as well as a stop at one or two of the Fairhaven Wharves that serve for dry-docking and maintenance.

In order to keep the operating costs down and the tours interesting, contracts should be created with local fishermen to use their boats for the harbor tours. With a capacity of around 15 people, the scalloping vessels and lobster draggers are the preferred vessels for the harbor taxis. This temporary use of underutilized vessels will offer much needed revenue for harbor fishermen.

The route will link harbor attractions with marina facilities and lodging locations. If well advertised in advance and linked to some interesting activities, visitors will be more likely to spend more time in New Bedford. Also, with the harbor taxi service centered at the Steamship Pier Ferry Terminal, linkages with passenger ferries to the Islands could also help generate ridership demand.

Figure 5-10: The harbor taxi fleet will consist of underutilized commercial vessels

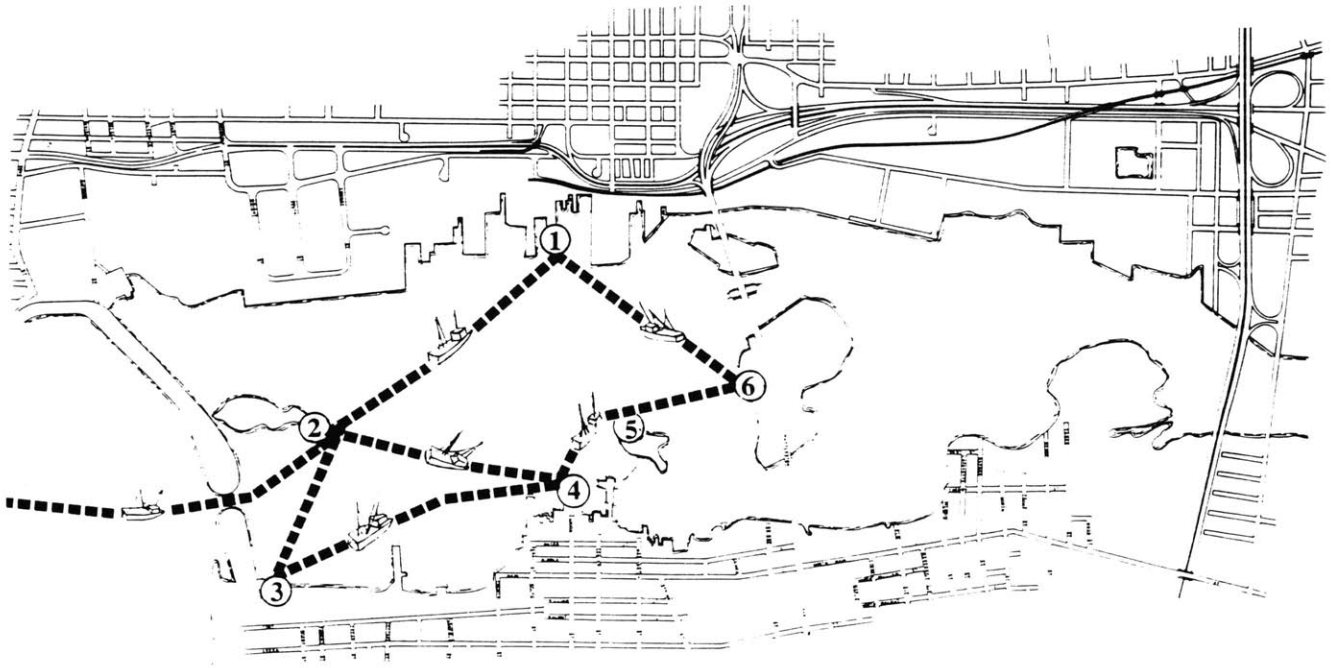


The implementation of the harbor taxi system builds upon New Bedford's many strengths: a fleet of under-utilized vessels, entrepreneurial mariners and numerous interesting landing sites. With convenient parking west of the Steamship Pier and linkages to pedestrian and bicycle trails at the various stopping points along the waterfront, the harbor taxis will be a convenient means to explore the harbor.

The Waterfront Walk

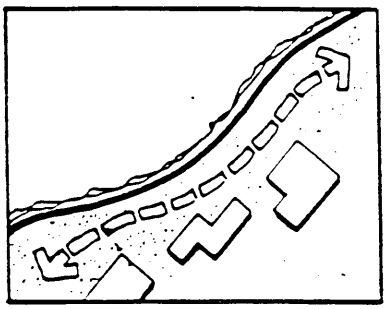
Although the best way to understand the fishing industry is to see it in action, most of New Bedford's waterfront is currently inaccessible and disorienting to visitors. While one can see the fishing fleet arrive and depart from certain points, such as the pedestrian overpass across Route 18, one can not see the processing operations or understand how the vessels are outfitted for sea. A harbor walk that links to the harbor taxi system and Urban Waterfront trolley should solve this problem by guiding visitors to places from which the fishing industry can be observed and understood, without it being interrupted. Such a route would not follow the shoreline continuously, but would touch the water's edge at key points.

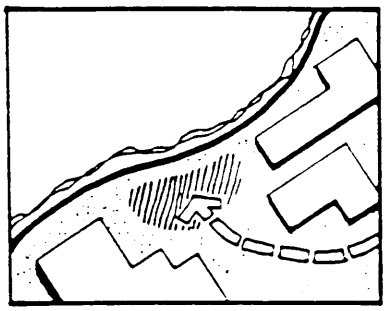
Figure 5-11: HARBOR TAXI PROPOSAL

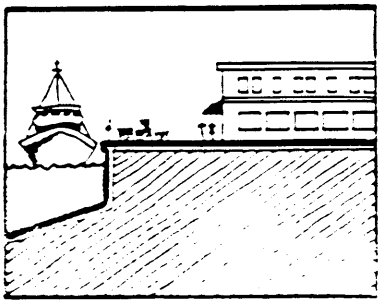


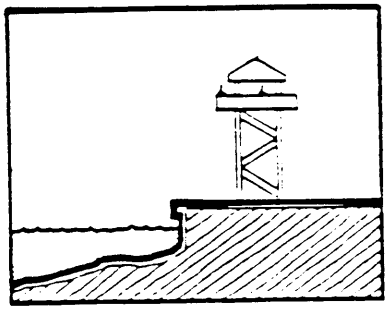
LEGEND

1	Steamship Pier
2	Palmers Lighthouse
3	Ft. Pheonix State Park
4	Fairhaven Wharves
5	Crow Island
6	Pope's Island Marina









A carefully laid out waterfront walk would help to accommodate and distribute visitors to New Bedford's significant sites without concentrating them at any one place. This route should be linked with established interpretive walks in the historic downtown area, including the Historic District Walking Tours, New Bedford's Nautical Mile, and the Black Heritage Trail. In addition, connections to the stops along the harbor taxi routes will provide more opportunities for exploring other areas of the harbor away from the Urban Waterfront.

Interpretive points along the walk could describe various waterfront activities and attractions:

- **Linear Trail.** Wherever possible, the Waterfront Walk will follow the shoreline and dock edge to offer visitors the opportunity to enjoy views and activity along the harbor.
- **Nodal Activities.** The Waterfront Walk will provide pedestrian connections along the waterfront. For instance the Marketplace and Trade Port and Whaling Port proposals will be linked.
- **Explanations of maritime operations.** Along the Waterfront Walk signs about the fishing fleet would describe the various rigs, where they fish, and the types of fish caught. Interpretive signs for the cargo operations would explain the destination or source of goods unloading and references to identify the ports of call of the various vessels.
- **Vantage points for viewing harbor activities.** In addition to the signs along the waterfront should be the development of various follies along the Waterfront Walk that allow visitors to climb up and have panoramic views of the inner harbor. These viewing towers would allow for one to view various functions of the harbor and see distant sites such as the harbor islands and the Hurricane Barrier.

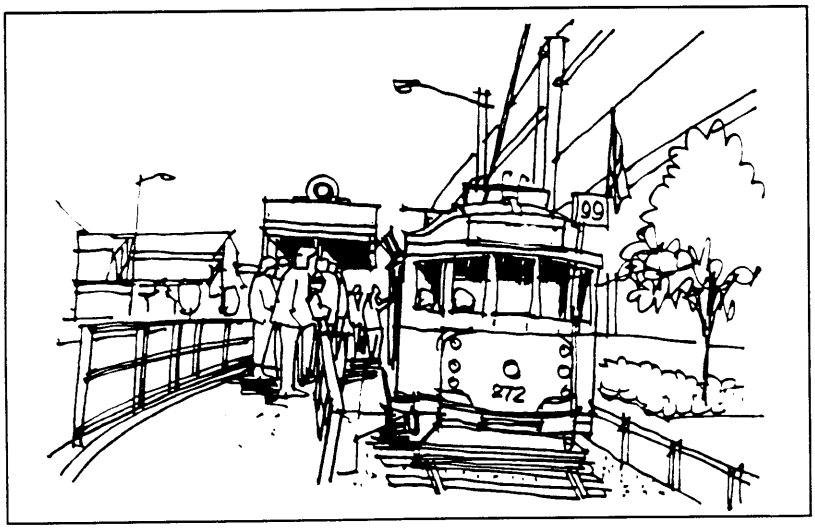
The participation of business owners along the harbor will be critical to the success of the waterfront walk. Assembling the requisite rights-of-way for a maritime trail would be essential, of course. In addition, some business owners, including those who own vessels or processing plants, could offer tours at certain times of the year.

Waterfront Trolley

A key transportation link along the waterfront should be the creation of a trolley line along the existing rail between the proposed Intermodal Staging Station and the Commonwealth Electric site. Through restoring an old trolley that can share the existing tracks with infrequent freight traffic, an inexpensive summer attraction along the waterfront can be created. **Figure 5-7** identifies the proposed stops along the Urban Waterfront. The trolley line would serve the following purposes:

- Shuttling people to and from the commuter rail terminal at the proposed Intermodal Staging Station and the Steamship Pier Ferry Terminal;
- Moving people between attractions including the Buzzards Bay Aquarium, the Whaling Port and the International Marketplace Port;
- Linking the proposed perimeter parking lots along the Harbor Boulevard to waterfront attractions and intermodal connections.

Figure 5-13: Harbor Trolley



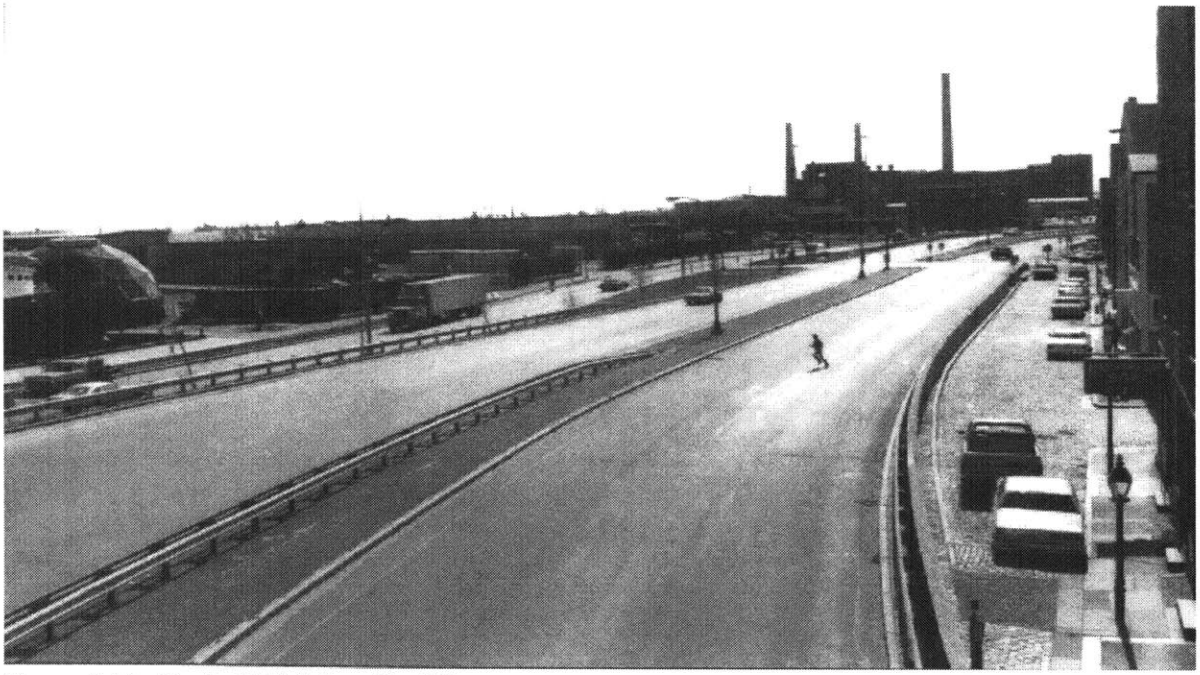


Figure 5-14: Route 18 Existing Condition

New Bedford Harbor Boulevard

Another landside complement to the improved waterside transportation linkages within the harbor should be reconnecting the Urban Waterfront to the historic downtown district. Through redesigning Route 18 as the Harbor Boulevard with multiple pedestrian and vehicular crossings, the city will reclaim lost development space. Presently, Route 18 and Mac Arthur Drive, the parallel service road, are significant sources of visual, physical and psychological disconnection. As a problem similar to Boston's Central Artery or San Francisco's former Embarcadero Freeway, re-knitting New Bedford's downtown and waterfront is perhaps the most crucial opportunity to improve the physical condition of the waterfront, while recreating its urban identity.

In addition to resolving the severance of the waterfront from downtown New Bedford, improving circulation and access is critical because the additional development of the waterfront offered in this plan will result in an intensification of activity within the Urban Waterfront subarea. Access and circulation improvements will be important to handle the increases in traffic within and to the area. With

increased activity on the waterfront, traffic volumes could create even more conflicts and worsen the current access problems.

Current Conditions -- Pedestrian access between the historic downtown district and the waterfront across Route 18 is poor. At the present time, there is only one pedestrian at-grade, signalized crossing located at the Mac Arthur Drive and Union Street intersections with Route 18, and via the elevated pedestrian bridge connecting the northern portion of the Historic Downtown district with the Fishermen's Pier on the waterfront.

Similarly, vehicular access points to and within the subarea are seriously limited. At the present time, car and cargo truck access to Route 18 is only possible at the intersection of Union Street, Mac Arthur Drive and Route 18. Currently, Union Street is the only through access route between the downtown waterfront and the rest of New Bedford.

The Connected Waterfront --The vision for the Harbor Boulevard is that Route 18, the principal entry into downtown and the waterfront, becomes a landscaped boulevard that reunifies the city and the waterfront without interfering with traffic between I-195 and the South End neighborhood. The first phase of "traffic calming" of the highway should be the creation of a new intersection with Route 18 at Elm Street and the restructuring of the intersection at Route 18 and Union Street to allow two way traffic between the waterfront and downtown.

Later improvements should include narrowing Route 18 by reducing the roadway shoulders and/or median areas. Presently, even city traffic engineers agree that the highway is built beyond capacity. These reductions in roadway sizes will help reknit the downtown and waterfront without compromising property access or the four moving lanes of traffic. In order to slow traffic down through the Harbor Boulevard portion of Route 18, additional signs will be needed and rumble strips or brick paving will be added at pedestrian crossings.

In order to reduce pedestrian crossing distances and unlock additional development areas near the waterfront, MacArthur Drive and Frontage Road should be realigned

at Union Street. With this improvement, nearly 50' of lost space will be reclaimed along the waterfront for parking or recreation to complement the tourism development, without compromising existing industrial businesses.

The creation of the Harbor Boulevard that unlocks lost space and improves pedestrian and vehicular connections to the downtown area is also important in creating linkages to parking areas. With the intensification of waterfront activities possible in New Bedford, new parking areas and development sites will be created along the space reclaimed through narrowing shoulders and medians. In addition, underused parking facilities in the downtown area, such as the Elm Street garage, will suddenly be more accessible to waterfront visitors.

Figure 5-15: View of Harbor Boulevard

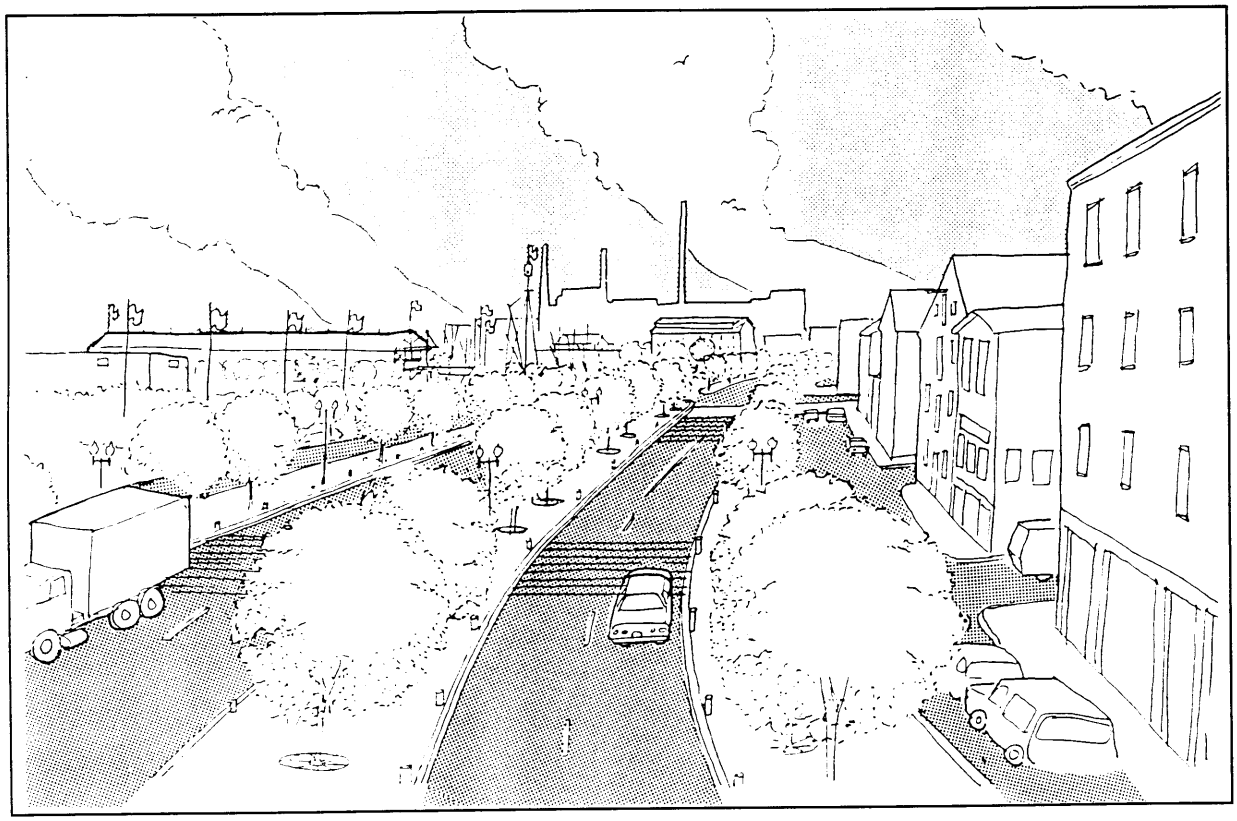
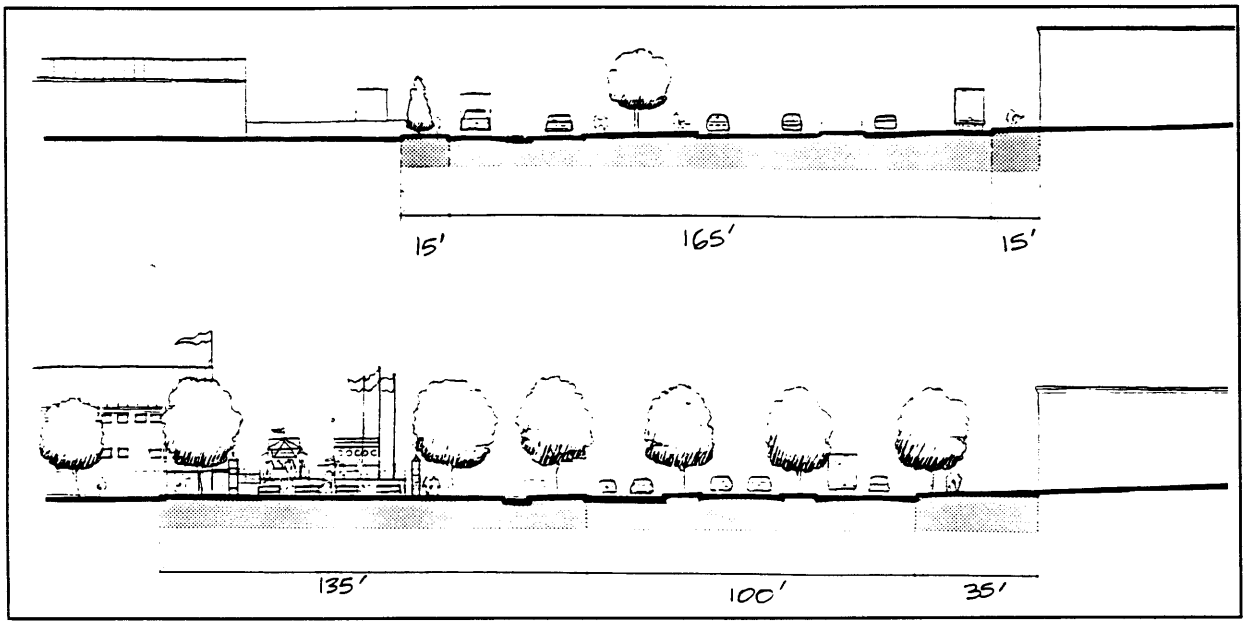
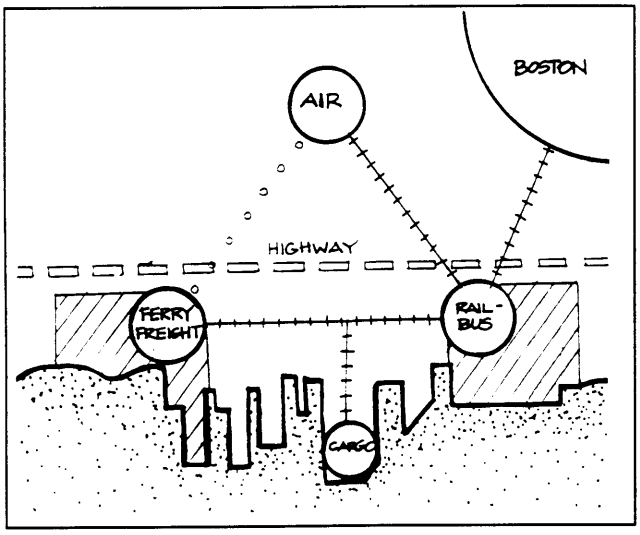


Figure 5-16: Sections of Existing Route 18 and Proposed Harbor Boulevard (view south to Union Street and MacArthur Drive)



6 HARBOR TERMINALS PLAN



The creation of Harbor Terminals to sustain and nurture maritime industries should be the cornerstone of rebuilding New Bedford's harbor economy. Intermodal connections and sophisticated infrastructure will define the successful centers for maritime industry in the future. If New Bedford is going to compete within an increasingly interconnected, global economy, it must reposition the Harbor Terminals for the future. For too long the community has not realized the potential of its Terminals because of a lack of modern infrastructure, poor access and a narrow market focus.

This Plan begins with background information on the land use, ownership, utilization and key issues for the five key sites in the subarea: North Terminal, South Terminal, the Commonwealth Electric site, the CDF #7 site and the Old Railyard. Subsequent sections of the Plan then offer key redevelopment proposals. Two developmnet concepts are proposed: **Intermodal Terminals** and **New Maritime Uses**.

The **Intermodal Terminals** proposal offers an improved network of rail, water and highway access. The key elements of this strategy are the creation of an **Intermodal Staging Station** and a **Ferry Freight Terminal and Distribution Center**.

The **New Maritime Uses** proposals that follow argue that as the harbor makes a transition away from traditional commercial fishing and processing, new industries should be targeted that can take advantage of intermodal transportation access and regional industry clusters. The four ideas offered are for the **Buzzards Bay**

Aquarium Complex, a **Marine Science and Technology Park**, the **South Terminal Aquaculture Park**, and **Niche Shipping and Distribution Centers**.

Following the description of these proposals, an implementation strategy is offered. Key actors, regulations and financial instruments are identified that should play important roles in realizing the necessary investments to make the Terminals once again the backbone of a strong maritime economy.

BACKGROUND

The Harbor Terminals Subarea includes the sites that have long been the center for the region's maritime processing, warehousing and distributing activities. As illustrated in **Figure 6-2**, the Terminals frame the central waterfront and are surrounded by two industrial districts. The North and South Terminal areas share a similar character and face the same challenges of constrained infrastructure and access.

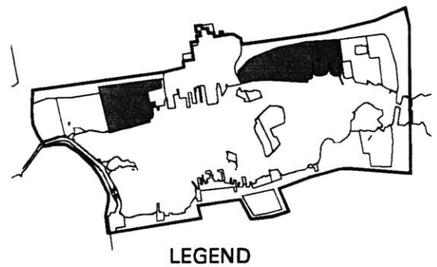
Planning for the future of the Harbor Terminals requires identifying both redevelopment and new development opportunities. In addition to the needs of the existing industrial facilities in the North and South Terminal are the development opportunities possible in adjacent sites. The following descriptions offer an analysis and directions for the five development areas with the Harbor Terminals Subarea:

- **North Terminal**
- **South Terminal**
- **Commonwealth Electric Site**
- **CDF #7 Site**
- **Old Rail Yard Site**

■ North Terminal

The area contains a number of marine industrial and warehouse structures, including Maritime Terminal, Frionor Norwegian Frozen Fish Ltd., International Marine, the abandoned Herman Melville Shipyard, and the former Railroad Depot site. The

Figure 6-2
Harbor Terminals



LEGEND

- ★ Development Catalyst Sites
- Underutilized/Vacant
- Proposed CDF Site
- Tanks
- Buildings
- Water
- Planning Area Boundary
- Planning Sub-Area Boundary
- Parcel Boundary
- Roads
- Rails

Sources

Buildings and Parcels: City of New Bedford digital data.
Water Depths: NOAA Nautical Chart, 1993 (1:20,000).
Transportation-New Bedford: City of New Bedford digital data.
Transportation-Fairhaven: MassGIS digital data, 1980s (1:100,000).

0 250 500 1000 1500 2000

SCALE IN FEET

boundaries of the terminal area include Route 6 on the South, Route 18 on the West, The Wamsutta Mills on the North, and the Acushnet River on the East.

Most of the terminal area is fronted by a single bulkhead, except on the north portion of the area's waterfront, which is fronted by an irregular shoreline that is intersected by several drainage sluice ways. Water depths along the waterfront range from -27 feet at the southern part, to -30 to -40 feet at the North terminal site, to -5 feet on the northernmost part of the district.

Figure 6-3: Existing North Terminal Business

Land Use

The area is dominated by fish processing facilities. However, other activities include the off-loading and storage of frozen food products, freezing plants and marine service facilities. A small concentration of uses that are non-water related currently exists along Herman Melville Blvd., between the current North Terminal and the

Railroad Depot site. These uses include cloth manufacturing and food processing facilities, as well as several bars and restaurants.

Most of the North Terminal bulkhead is used for transient berthing and the off-loading of cargo products. Permanent docking is not allowed, but, the site does provide berthing capacity for 25 commercial fishing boats. A large part of the "break bulk" cargo unloaded at the North Terminal is transported aboard two small freighters that run regularly between New Bedford and the Cape Verde Islands and between New Bedford and Portugal. Much of the fruit is loaded directly into trucks and transported to markets, such as Canada.

Ownership and Utilization

The parcels included in the area recognized as North Terminal and the Herman Melville Shipyard site are owned by the HDC. Parcels at the waterfront edge are leased under long-term (99 year) land contracts to various marine industries. The landward portion of the site is mostly leased to marine-related industries. Privately owned properties within this area include the Maritime Terminal, Frionor Norwegian Frozen Food Fish, Ltd. Company, and the International Marine site. The International Marine site is a privately owned site but currently under bank receivership.

Issues Facing North Terminal

Expansion Constraints-- Maritime Terminal, in particular, is eager to find opportunities for expansion. The major constraint currently is the lack of upland areas for storage and warehousing. With the development of a potential CDF adjacent to the Terminal, successful coordination of development on the site could serve the expansion needs of North Terminal operations.

Land Access -- The area currently has relatively poor access and circulation. Route 18 is not easily reached, and the internal site circulation is difficult. A key improved connection to make between the area and Route 18 would involve rerouting Herman Melville Blvd. to create an intersection with Hillman Street.

Water Access -- Repair and restoration of the Route 6 bridge between New Bedford and Fairhaven is now underway and will resolve the significant challenge of vessel movement to the area. In addition, the removal of debris from the bridge's east channel will also help to improve access to the area.

Redevelopment Vision

The prosperous business environment in North Terminal should remain a mix of shipping operations and supporting services, but, key improvements should be offered to improve their efficiency. As a mature, fully developed industrial park, the future of North Terminal will rely on improved transportation access to nearby sites for expansion.

■ South Terminal

South Terminal is an approximately 30 acre light industrial park that is almost fully developed and contains fish processing plants and off-loading cargo facilities. The area is located immediately south of New Bedford's working waterfront district. The boundaries include the Standard Times Field on the South; Route 18 on the West; the Commonwealth Gas & Electric Co. on the North; and the Acushnet River Harbor to the East. The area is fronted by a 1,200 foot bulkhead and has water depths at the bulkhead that are -30 feet below mean low water. Buildings in the South Terminal are predominately light industrial type metal frame structures with metal siding. Parcels are generally divided by wire-mesh fencing.

Figure 6-4: Harbor View of South Terminal

Land Use

Major uses include off-loading facilities for the commercial fishing industry, fish processing plants, and related industrial warehousing and trucking activities. Other common uses include the unloading, processing, storage, and the distribution of fish.

Land uses vary between the upland and waterfront areas. The upland area is mostly used for small scale-fish processing, storage and warehousing, as well as for transportation and shipping purposes. The 740 foot-long bulkhead of South Terminal is only used for transitory berthing for off-loading fish and products (Manley, 1996). All docking at the terminal bulkheads is only for transient purposes; no long term berthing is permitted.

Most of the harbor's processing plants are located in the South Terminal area. Historically, the plants had to be sited along the water's edge so they could receive product directly from the fishing vessels. Today, however, some processors rely exclusively or partially on product shipped in from outside the area and are less dependent on the local catch.

The processing industry has created growth in the manufacture and sale of packaging products used for processed fish. A number of these enterprises are located in the South Terminal Industrial Park. These tenants rely more on proximity to trucking services than water-dependent processing operations and are currently facing the constraints of poor access and circulation to the South Terminal area.

Ownership and Utilization

The South Terminal includes properties that are both publicly and privately owned. In addition to owning the terminal bulkhead, a majority of the waterfront parcels are owned by HDC and leased under long term 99 year contracts at very low lease rates. All parcels in the backland and across Hassey Street are privately owned.

Although there are a few vacant parcels within the Terminal, most properties remain occupied. Declines in the fishing industry, however, have led to the under utilization of a number of properties.

Issues Facing South Terminal

Use -- As the fish processing industry continues to change, the under utilization of facilities will increase. Currently, consolidation in the processing industry, increasing FDA health and safety standards, and the lack of modern infrastructure cast an uncertain future for many operations in the area.

Access-- Increasingly, the fish processing facilities in the area are dependent upon catch that is trucked in. With nearly 80 to 100 million pounds a year trucked to sites in the area, access points and maneuvering areas are becoming inadequate. The limited access design of Route 18 only exacerbates these circulation problems by severing the area from the city's street network.

Development Constraints -- Although there is no current demand, suitable sites for future large-scale new development are limited because of limited vacant, contiguous parcels. The key to overcoming this constraint is the expansion or redevelopment of existing sites, as well as connections to potential developments on adjacent sites, such as the Standard Times Field on the south, or the Commonwealth Gas and Electric site on the north.

Frontage to Route 18 -- The image and appearance of the area near Mac Arthur Drive and Route 18 needs upgrading. Improved signage, landscaping, and rehabilitation of existing structures are important improvements to attract new investment.

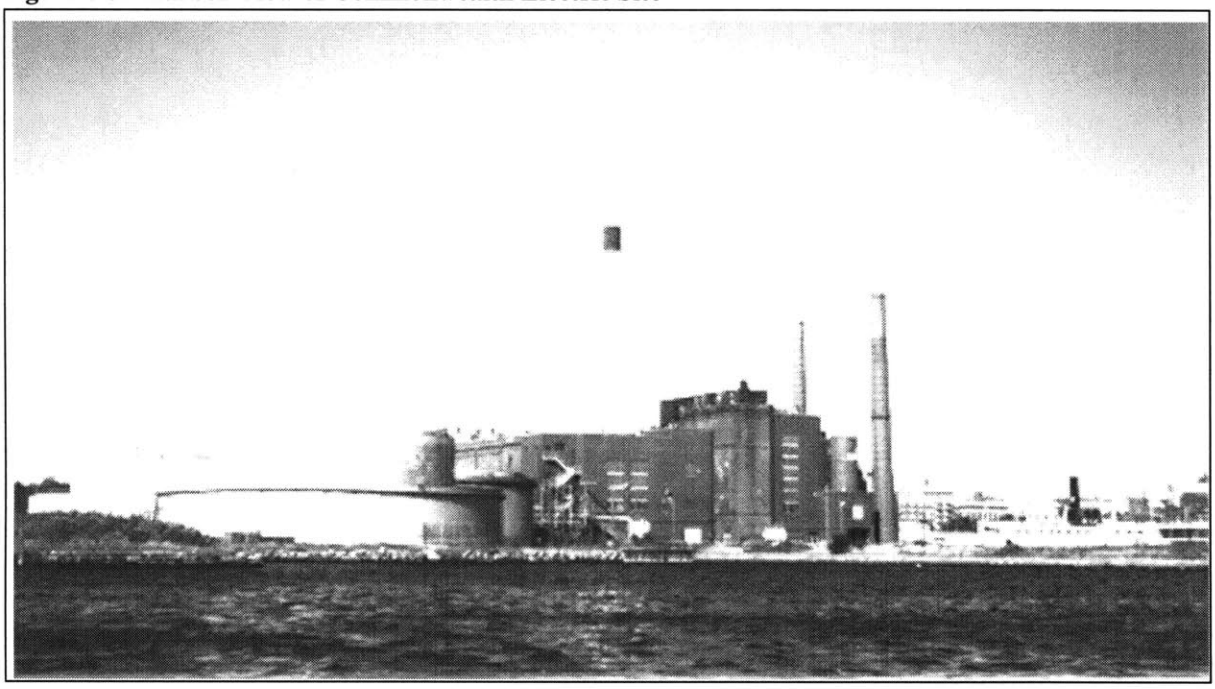
Redevelopment Vision

Since the scale and facility demands for fish processing will continue to change, new uses should be introduced into the South Terminal area. Although the area is largely built-out, the substantial underutilization of facilities is likely to continue unless new uses are identified and explored for South Terminal. Aquaculture and marine science technologies represent two marine based industries with significant growth potential that can be compatible with the existing processing and packaging businesses in the area.

■ Commonwealth Gas & Electric Company Site (CG&E)

Located between the Urban Waterfront and South Terminal area is the key opportunity site of the Terminals area. It is currently owned by the utility company, Commonwealth Electric. Active operations have ceased at the facility, and the city has been offered ownership of the property. Along the waterfront, dredged water depths range from -10 to -30 feet below mean low watermean low water (HDC, 1996).

Figure 6-5: Harbor View of Commonwealth Electric Site



Site Facilities

- Docking area that is currently in a state of disrepair.
- Cooling water intake area maintained at the northern portion of site
- Barge receiving dock that is currently in state of disrepair
- 15.5 acres of vehicle parking and maneuvering area with security fence
- Site include 125,000 square feet facility which is used for covered storage purposes

Site Utilization

Site is mostly vacant; it was formerly used for power generation, fuel storage and electrical transmission activities. The southern portion of site is leased to Global Petroleum. It is used as a tank storage and distribution facility. Although deliveries to Global Petroleum are mostly by truck, sporadic fuel oil deliveries by barge also occur. Northern wharf was formerly used for barge docking areas. At present time no fuel is delivered by water.

Constraints and Opportunities

Significant Investment in a Major Use -- The activity generated by major redevelopment efforts on the large property will have significant implications for both infrastructure demands, and the general character of the surrounding area as well.

Environmental Concerns -- Potential environmental hazards on the site may require substantial remediation efforts and may prove costly for significant redevelopment efforts.

Access and Circulation -- Development that increases activity on the site will require access improvements. A potential improvement could be achieved through creating a traffic intersection at Pike Street and Mac Arthur Drive that would better connect the site to Route 18.

Redevelopment Vision

Since the utility company is willing to give the city this 25 acre site, it is a significant redevelopment opportunity. Centrally located on the waterfront, the site offers significant potential to support the activities in both the adjacent Urban Waterfront and Harbor Terminal Subareas. By redeveloping the southern portion of the site as a ferry freight and containerized cargo distribution center, and the northern portion as an R&D Aquarium, the potential of the site can be maximized.

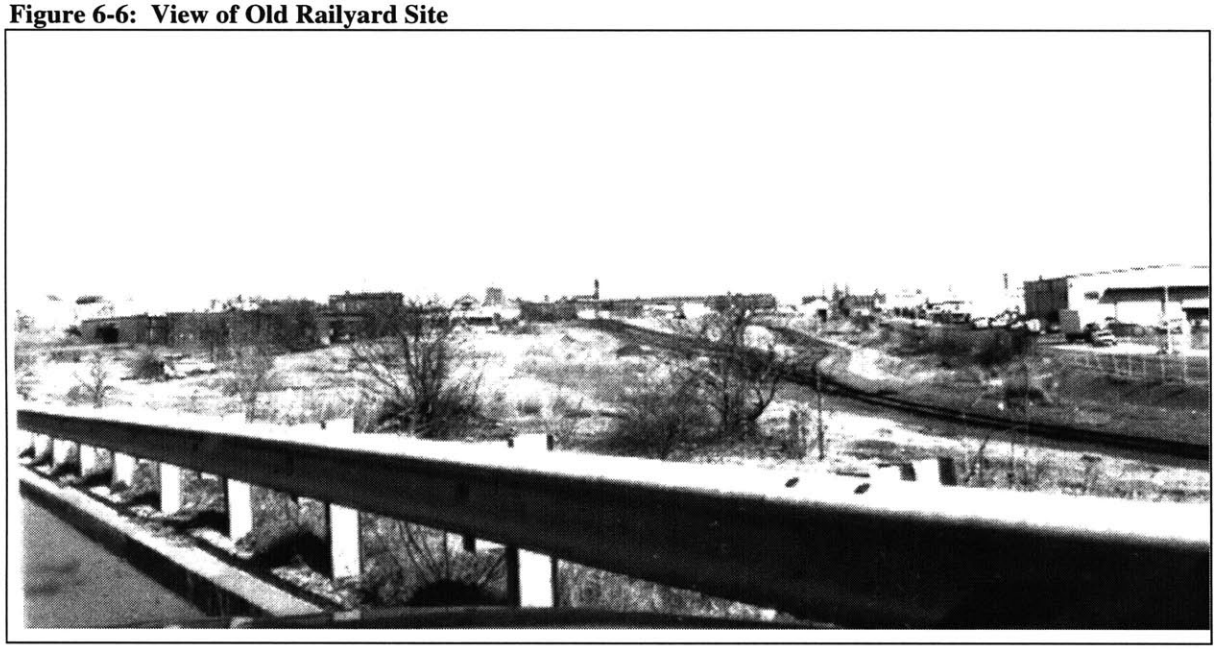
■ Old Rail Yard: Proposed Intermodal Staging Station

The proposed MBTA commuter rail site at the old city railyard is bounded by Herman Melville Boulevard and North Terminal to the east, Wamsutta Street to the north and Acushnet Avenue and Route 18 to the west. The centrally located site is the former location of the New Bedford railroad station and will be easily developable because of its even grade. Currently, the 31.5 acre site is vacant, except for the Conrail line running through it.

Ownership and Utilization

The vacant site is owned by three different entities: the City of New Bedford owns 15.0 acres, Conrail/Penn Central Railroad controls 10.8 acres, while the State controls 0.6 acres. The most significant deed restrictions on this site relate to the Conrail/Penn Central parcels where Conrail retains the rights to use the tracks. There is also a drainage restriction relating to contour changes that increase runoff to the adjoining properties.

Figure 6-6: View of Old Railyard Site



The existing zoning is the flexible "Industrial B", which permits a wide range of industrial and commercial uses. Since the site is also in the "Working Waterfront Overlay" district, additional uses, such as fish processing are also allowed. Although much of the site is composed of filled tidelands, it is landward of Herman Melville Boulevard, and therefore landlocked and not subject to DEP control through Chapter 91. Because of this, the site is not subject to DEP jurisdiction under Chapter 91 or the DPA.

Constraints and Opportunities

Central Location -- As a large, developable site adjacent to New Bedford's downtown, the site has significant potential as a development site with strong links to central New Bedford locations.

Access and Circulation -- Although the site offers high visibility from Route 18 and is centrally located, poor access has compromised it's development potential. Beyond improving access to Route 18 there are potentials for intermodal connections by rail or bus shuttle between the rail terminal and locations along the waterfront and in downtown New Bedford.

Environmental Considerations: The former industrial uses on the site involved the handling and use of oil, fuel and other potentially hazardous materials. Soil contamination may, therefore, be present on the site and significant remediation efforts may be necessary. Additional considerations will need to be given to the three small vegetated wetlands along the northern edge of the site.

■ Confined Disposal Facility (CDF) Site No. 7

EPA remediation efforts have important implications for the ecology of Buzzards Bay and the immediate harbor area. Contaminated material dredged from the Harbor will be relocated to several sites within the Harbor area. The creation of a CDF site in the North Terminal area will be one of the benefits obtained from the remediation effort because it has the potential to become a key development opportunity.

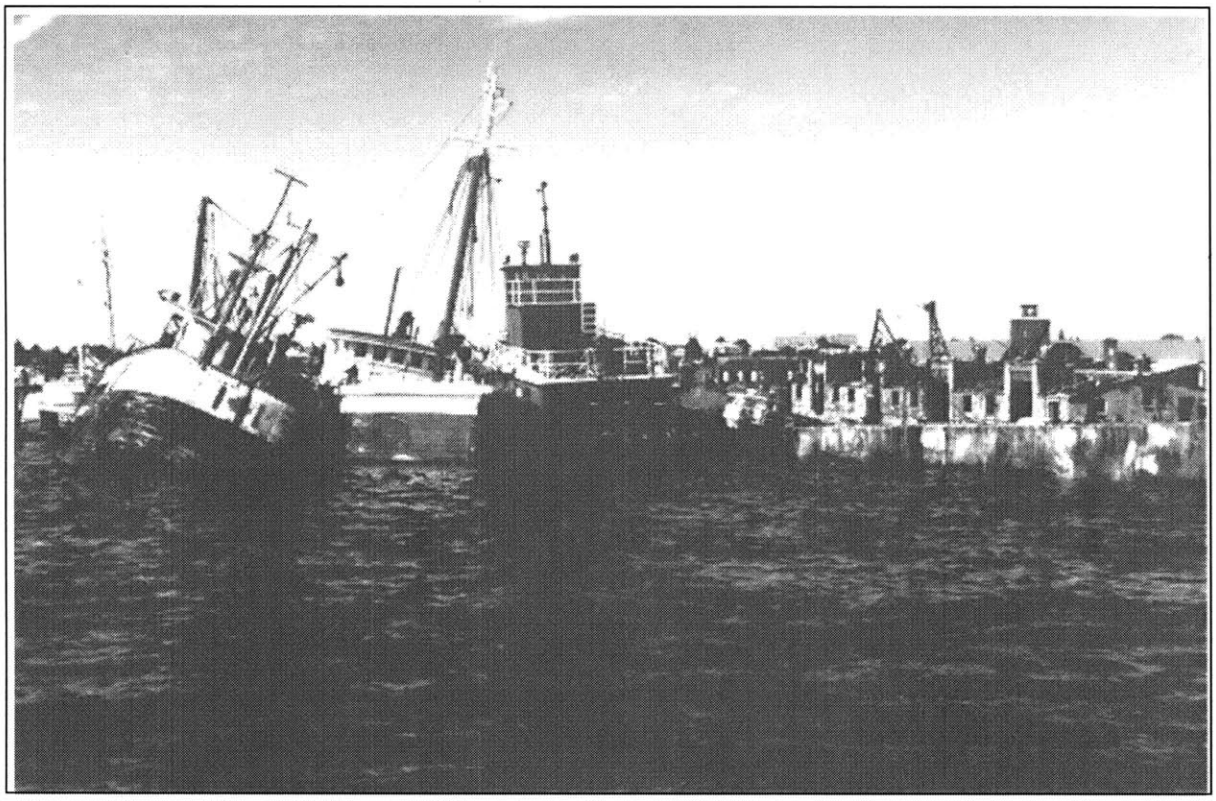
Since final siting decisions have not been made, proposals for the use or design of the CDF 7 site have not been developed. EPA officials explain that the principal idea will be to construct a bulkhead along the State Harbor Line, extending the line of the existing Bulkhead at North Terminal. Dredged material will be placed behind the bulkhead, filling the current irregular shoreline form North Terminal to the Revere Copper site. A temporary cap will be over the fill while it settles over a seven year period, after which a permanent seal will be placed over the site. The CDF will be an earthen dike 5 to 12 feet above high-tide water level. Its final surface will be

developed according to the final use it will accommodate. Wave and storm protection will be provided by a concrete-faced sheet pile and a steel bulkhead.

Constraints and Opportunities

Time Frame -- It is important to explore development opportunities that take into consideration the extent of the cleanup area, as well as the seven year period of contamination settling before the permanent cap is in place and the site is developable.

Figure 6-7: View of Proposed CDF #7 Site

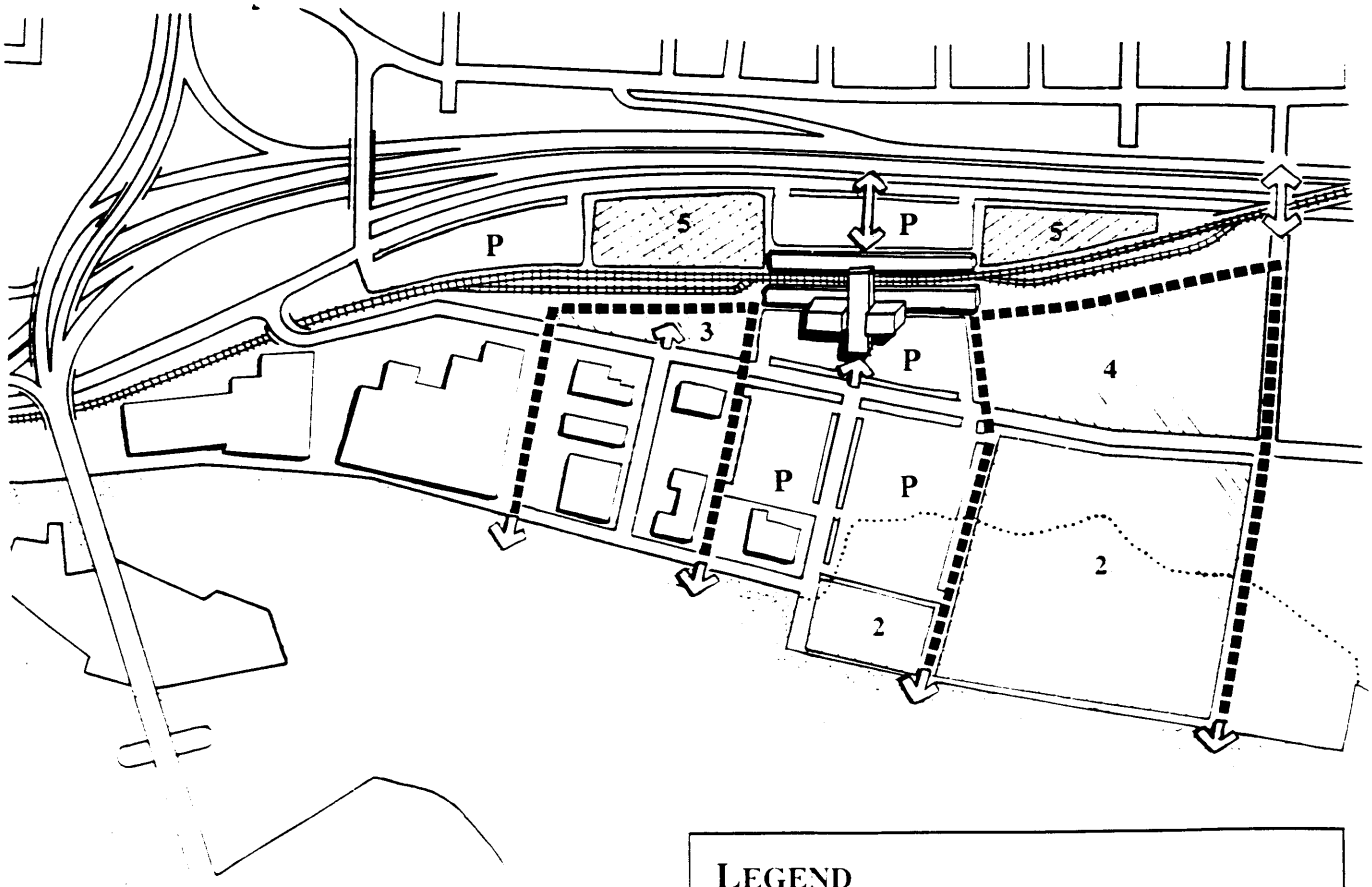


Site Cleanup -- The creation of the CDF provides an opportunity to remove derelict vessels from the area and to contribute to the improvement of the overall image of the Harbor. Without these EPA efforts in the area, it is unlikely that the site cleanup would occur.

Zoning-- The existing zoning is "Industrial B" which requires a 25 foot setback, a maximum building height of 100 feet and 50% coverage of the site. The site is also located within the "working waterfront overlay" district which permits industrial uses and fish processing.

Redevelopment Vision --The creation of this significant development opportunity from EPA's efforts should be maximized. Since remediation efforts will prevent development for at least the next 7 years, a future vision of the site is important. Offering strong access and a central location, the site would be ideal as the site for marine science technologies identified below.

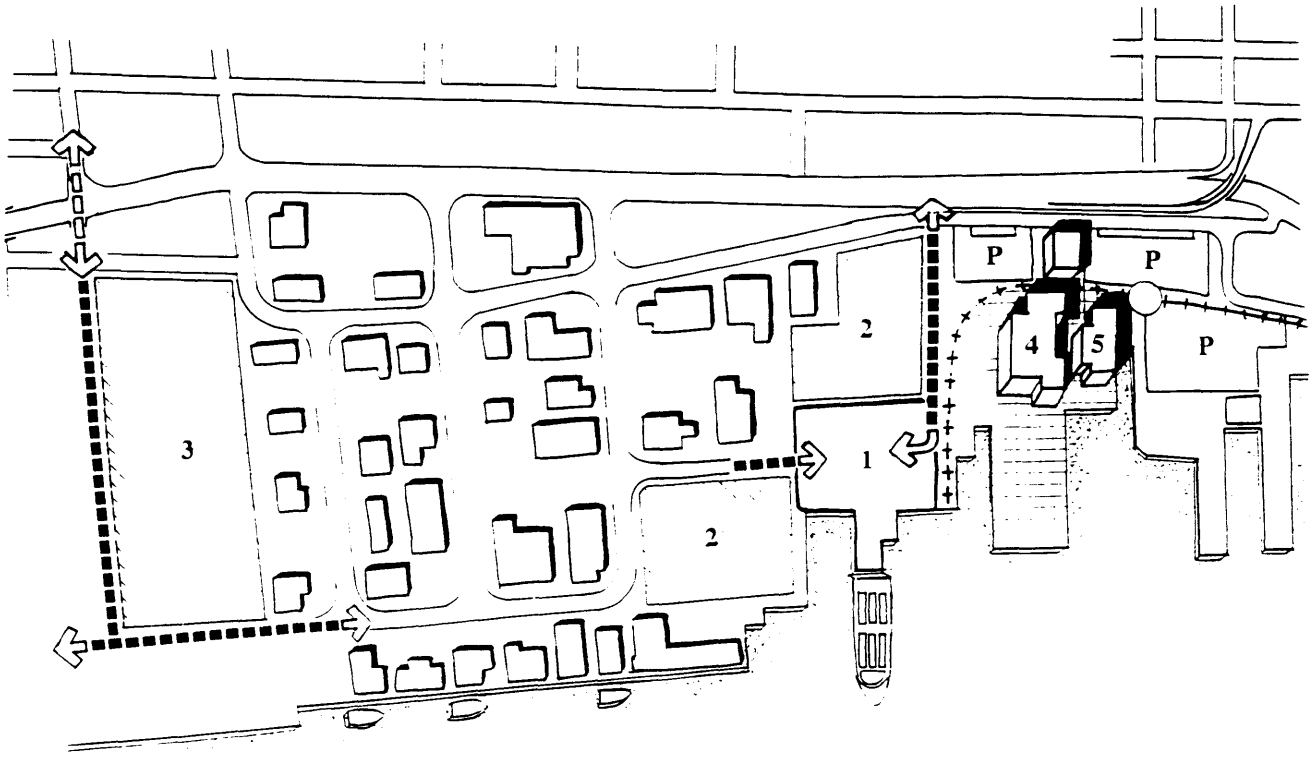
Figure 6-8: NORTH TERMINAL AREA PROPOSALS



LEGEND

- Marine Industrial Sites
- Comm. Dvlpt. Sites
- New Industrial Access
- Improved Intersection
- Waterside Access Point
- Existing Shoreline
- P Parking
- 1 Intermodal Station
- 2 Marine Sciences Park
- 3 Truck Freight Staging
- 4 Maritime Intl. Site
- 5 Transit-Comm. Dvlpt.

Figure 6-9: SOUTH TERMINAL AREA PROPOSALS



LEGEND

- Public Access
- Maritime Industrial
- New Street
- Traffic Improvement
- P Parking
- 1 Warehouse Area
- 2 Marine Sciences Park
- 3 Aquarium
- 4 Aquaculture Center
- 5 Ferry Freight Staging

HARBOR TERMINALS PROPOSALS

The existing Terminals and their adjacent development sites should remain the focus for marine industrial development in New Bedford. In addition to the significant infrastructure already present are potential transportation connections that can unlock development potential. The strategy for the Harbor Terminals should be to target strategic new uses and facilitate their development or expansion through improved intermodal transportation links. The first section offers the proposals to create **The Intermodal Terminals**, while the following section identifies four **New Maritime Uses**.

■ The Intermodal Terminals

The most important investment in the Harbor Terminals Subarea is the creation of an intermodal transportation network to facilitate industrial development. Attracting new maritime uses and strengthening existing ones will require significant improvements to the access and circulation system throughout the Harbor Terminals Subarea.

The two development opportunities described below link underutilized sites with planned transportation infrastructure investments. These key catalyst investments are the creation of an **Intermodal Staging Station** on the Old Railyard site, and the development of a **Ferry-Freight Terminal and Distribution Center** along the northern end of the South Terminal area.

North Terminal: Intermodal Staging Station

The catalyst for realizing this project is the commuter rail line planned by the MBTA. Currently the Authority is planning to spend nearly $200 million dollars towards the improvement and development of a rail line between Boston and New Bedford-Fall River (Austin, 1996). At the end of the New Bedford branch, the proposal includes the creation of a modest station for parking and a layover facility for train storage on the former railyard site, as illustrated in **Figure 6-8**.

The preliminary site plan does not consider the high potential of the site to become a catalyst of development to serve both commuting and industry needs. The current site plan includes a large parking lot for 950 cars on the northeastern portion of the site, a modest platform and bus drop off area in the middle and the layover tracks in the southeastern portion. This site plan is poorly considered because it places all of the commuter rail parking on the eastern side of the tracks, which has poor pedestrian connections and strong potential for servicing adjacent maritime industries.

Capitalizing on the planned MBTA rail investments in a creative way can enable the site to realize it's development potential. An innovative site plan that incorporates the improved rail investments will include an integration of commuter and freight circulation on the site with development parcels for buildings to meet the needs of the adjacent maritime industries. The station will also serve as a staging point for Harbor Trolley service that will continue from the station to the Urban Waterfront attractions.

The site should be developed in phases, as illustrated in **Figure 6-8.** The initial phase should include the development of the commuter rail station on the west side of the tracks and a truck parking and maneuvering area on the east side. Each side of the tracks will have pickup/drop-off staging and a shared layover facility on the south. Important access improvements to make include direct intersections with Route 18, Hillman Street and Wamsutta Street. These improvements are critical because the highly visibility site currently suffers from poor access to downtown and other waterfront areas.

Immediate expansion demands for nearby maritime industries on the site would be met through the rapid truck staging area to serve as a cargo transit point, and the development of warehousing to service Maritime Terminals' intended expansion into containerized cargo.

In the later phase of the Intermodal Rail Station, the site could be more densely developed through a linkage with the adjacent CDF #7 site. A parking lot and

maneuvering area along the western perimeter of the CDF site could serve both the Marine Science Technology Park on the CDF, as well as the warehousing activities near the rail station. The creation of the shared parking facility would also free up the valuable parcels along the rail line for transit oriented development that could include commercial services and offices on the western side of the tracks and warehousing-distribution facilities on the eastern side between the rail lines and Herman Melville Boulevard.

South Terminal: Ferry Freight Terminal and Distribution Center

The development of a ferry freight terminal adjacent to South Terminal represents the other key intermodal investment needed to expand maritime industries in New Bedford. As the location for roll-on/roll off cargo and distribution activities, the ferry freight terminal would complement the creation of an Intermodal Staging Area adjacent to North Terminal.

Through allowing for "roll-on/roll-of" tractor trailer cargo to move in and out of the Port of New Bedford, a new market would be tapped that could utilize harbor facilities and resources. The growing market for this type of cargo is more regional in scale than the international break-bulk cargo operations envisioned for the State Pier, but equally vital to expand shipping and distribution activities. Potential markets for roll-on/roll-off cargo include the Islands, as well as untapped markets, such as the Canadian Maritimes (Cavanaugh, 1996).

According to Les Lewis of DEM, the basic terminal design would initially require 3-4 acres of land and ideally include connections with rail and highways and a large area for truck parking and maneuvering. Docking systems incorporated into the design would include the latest technologies for vessel docking and safety.

It is important that the eventual siting of the ferry-freight terminal creates linkages with waterfront resources. Currently, a study by the architectural office Cecil & Rizvi is studying site selections options. Unfortunately, the siting at the State Pier, which is currently favored, has considerable constraints for realizing the potential of the facility. These constraints include limited expansion area and poor maneuvering.

Since the development of a ferry freight terminal could be linked to associated shipping and distribution activities, a site with significant expansion potential should be chosen. An ideal siting would be the area between the South Terminal and the Commonwealth Electric site.

The site has a number of key advantages that could serve as a catalyst for redevelopment of the underutilized South Terminal and Comm Electric areas. The site has strong, existing waterside transportation connections at the Green and Wood Pier and a large tract of developable land for expansion. The expansion of truck staging and warehousing could occur on adjacent underutilized properties in the South Terminal or the southern portion of the Commonwealth Electric Site. In addition to having expansion potential, truck access could be easily accommodated through an extension of Cape Street in South Terminal, while a rail link to the Intermodal Staging Center could be created across the Commonwealth Electric property.

Market Strategy -- Since the success of a ferry freight terminal will largely depend upon the markets targeted, New Bedford should focus on markets for transport of roll-on/roll-off cargo with strong growth potential. These markets should include both distant, underserved ports, such as the Canadian Maritimes, as well as growing regional markets, such as the Islands.

The Islands represent the most significant potential for growth because of the reciprocal relationships possible. If the suggested intermodal improvements for the harbor area were realized, New Bedford would be in a strong position to supplement the service from Woods Hole and Falmouth to become the primary service point for the Islands.

Ferry freight service between New Bedford and the Islands would bring benefits to the operator, the Steamship Authority, and to both communities. Rerouting a portion of some of the existing Martha's Vineyard ferry traffic to New Bedford would ameliorate much of the existing and future impacts that the ferry system has on the towns of Falmouth and Woods Hole. This would also be of benefit to the Authority

since according to Charlie Gibson at DEM, the Authority is experiencing increasing congestion out of Woods Hole.

For New Bedford, the resumption of ferry freight service would bring significant spin-off economic benefits to the city. These benefits include the wholesale, retail, and service industry trade connected with the renewed New Bedford-Martha's Vineyard trade.

Despite the potential mutual benefits to this freight traffic, certain concerns about the service will need to be addressed. Strong opposition to the expansion of New Bedford ferry services has come chiefly from Island residents and civic leaders. These groups fear that having service from New Bedford will lead to increased freight costs, transit times and greater auto congestion on the islands. According to Gibson, these fears are unfounded because automobiles will not be allowed on the ferries and the overall transit times will be less because New Bedford is closer to the primary market of Boston. In addition, Gibson explains that the lower costs of operations out of New Bedford from enhanced freight hauler competition could actually result in lower prices of goods shipped to the Islands.

■ Introduce New Maritime Uses

Building upon the investments in an intermodal network to serve the Harbor Terminals is a strategy to expand and develop new maritime industries. As New

Bedford faces the difficult transition from an economy dependent upon heavy industry and commercial fishing, economic development efforts should target niche shipping, aquaculture and marine science technologies as opportunities for future growth. Four new uses, as described below, are offered to build upon the strengths of the Harbor's location and resources.

- **Buzzards Bay Aquarium Complex**
- **Marine Science and Technology Parks**
- **South Terminal Aquaculture Park**
- **Niche Shipping and Distribution Centers**

The Buzzards Bay Aquarium Complex

Presently, a conventional aquarium development is proposed for the site. The ambitious commercial development proposal calls for an aquarium, a 200,000 square foot convention facility and hotel, a passenger ferry terminal and supporting restaurants and retail. The proposal is unlikely to get the necessary financial backing because the proposed program is not adequately differentiated from successful aquariums in Boston and Mystic that are within the market area.

Although a conventional, commercial aquarium has limited prospects for success in New Bedford, the site is ideal for smaller scale, strategically programmed facility. The proposed Buzzards Bay Aquarium Complex can become the flagship of New Bedford as a center for new maritime industries through including an aquarium, marine research and educational complex on the northern side of the Com Electric property. As a Research and Development (R&D) facility with interpretive resources, the Buzzards Bay Aquarium Complex would serve as a transition area along the waterfront: to the north would be the mixed-use Urban Waterfront, while to the south would be the industrial South Terminal area. A creative aquarium project can successfully bridge these areas by offering facilities for both marine research and exhibits to entertain visitors.

The underutilized Commonwealth Electric site offers a number of advantages for this use. Beyond having existing structures that could be adapted for the R&D uses, the site includes enough pier space and water depths up to 23' to allow for a wide range of vessels (Manley, 1996). Terminating directly on the site is the rail line which runs from the New Bedford Airport and to the proposed MBTA terminal. The Aquarium and Aquaculture Park would be the final stop along this route for both freight traffic and the proposed Waterfront Trolley.

Throughout the site, R & D activities could be integrated with interpretive exhibits to provide a major tourism element on the waterfront that solves both marine industry needs and zoning requirements. The aquarium would be located in the existing Comm Electric Building. Peter Chermayeff, an architect from Cambridge Seven Associates has inspected the structure and feels that it is sound and ideal for

retro-fitting as an aquarium. He believes that between $10 million and $15 million will be saved in construction costs due to the solid construction of the facility (Chermayeff, 1996).

As suggested by the Greater New Bedford Zoo and Aquarium Corporation, the primary theme for the aquarium should focus on the waterways ecology of Buzzards Bay, Georges Bank, and the New Bedford Harbor. The exhibits could focus on sustainable development that brings together economic development and environmental management. This focus is key to gain the necessary funding support of the Harbor Trustees Council and the involvement of key local players such as the Buzzards Bay Committee. Exhibits and related research at UMass Dartmouth could focus on the ecology and economies of the Georges Bank fishery trade upon which New Bedford and Gloucester are dependent, as well as the current EPA restoration of the Achushnet River Estuary.

Much of the work and exhibits in the aquarium could be dedicated to an understanding of the Achushnet River Estuary and Buzzards Bay. These areas provide a key opportunity to expand understanding of the coastal environment. The clean-up and restoration programs currently underway could be at the core of many of the efforts and provide a basis for building innovative educational and community outreach programs that focus on the value of coastal ecosystems and the need for sustainable human development.

The aquarium's themes of fishing and modern marine science would follow the precedence of successful aquariums elsewhere. Like California's successful Monterey Bay Aquarium, which celebrates Steinbeck's Cannery Row, New Bedford has an industrial fishing heritage popularized in literature by a famous author, Herman Melville. Similar to Mystic Seaport, New Bedford could augment the appeal of an aquarium by completing the development of an entire historic village concept with a national park and working waterfront. As Baltimore's National Aquarium and others have focused public attention marine science and education, the location of the New Bedford Aquarium gives it the potential to draw on

Massachusetts' many preeminent university programs, including the US' largest oceanographic institute at Wood's Hole.

An important maritime industrial component of the project will be the development of a demonstration aquaculture facility within the main aquarium building, or in the adjacent warehouse. This facility would serve as another part of the interpretive aquarium experience, as well as serve as an incubator for small aquaculture business initiatives. The key element of the project could include a tank culture system for fish and shellfish species. The treated water would be shared with the aquarium, while the technical support and guidance could be provided from marine scientists at CMAST at UMass Dartmouth.

Marine Sciences and Technology Industries

The potential for the development of this industry sector is strong in New Bedford because marine technology companies are already strongly clustered in the region. In greater New England, naval shipbuilding is concentrated in Maine, Connecticut and Rhode Island, while Massachusetts has a significant concentration of marine electronics firms. Approximately 60 of the 150 companies in the US marine instrumentation industry are located in Massachusetts, with over 18,000 employees (Hogan and Huff, 1991).

Marine technology employment in Southeastern Massachusetts is in several areas of the industry. Fairhaven has a number of small ship repair companies that serve the fishing and recreational industries, while Falmouth is the hotspot for marine instrumentation. Over twenty companies are located in Falmouthbecause of its proximity to Woods Hole Oceanographic Institute (WHOI). According to New Bedford's former planning director, Dave Kennedy, marine electronic firms favor access to research, skilled workers, and proximity to markets and the ocean.

Historically, marine science and technology firms have developed near the institutions, such as Woods Hole, that provide the technology and markets for their products. Kennedy explains that the companies in the Woods Hole area include Benthos, a manufacturer of oceanographic, robotics, and remote environmental

systems; ORE, a manufacturer of acoustic flow measurement systems; Datasonics, which manufactures underwater acoustic instrumentation; and C-MAP, which provides electronic chart display and information systems (Woods Hole, 1992). Collectively, the industry cluster includes marine related components for boats, marine electronics and instrumentation, marine environmental products and services and oceanographic research. In New Bedford, the greatest potential exists for marine electronics and instrumentation because of an existing concentration of supporting institutions and businesses in the greater region. The vision of a marine science and technology industry in New Bedford would depend on the creation of a significant manufacturing, distribution, and research center to complement regional marine science research institutions. In particular, Woods Hole, the University of Rhode Island and the UMass-Dartmouth CMAST facility would play key catalyst roles for fostering the local industry's development. These institutions can provide an important source of research, innovation, and highly skilled workers.

Through creating strong intermodal connections to waterfront development sites, New Bedford can exploit its cost competitive harbor infrastructure to develop a marine science industry. Financial instruments such as the Foreign Trade Zone and state grants, training and manufacturing assistance programs would be the key to realizing this initiative.

UMass-Dartmouth -- Just as Falmouth's marine science businesses have thrived from proximity to Woods Hole, New Bedford should take advantage of new marine science efforts at UMass-Dartmouth. The local University has long been interested in the marine science and technology industry. In addition to related economic research conducted through the College of Business and Industry is the Center for Marine Science and Technology (CMAST).

With the construction of a new facility and expanded efforts, CMAST represents the key to developing a marine technology park in South Terminal. The new CMAST center is a $10 million, 32,000 square foot facility to be constructed near New Bedford's Fort Rodman, approximately 3 miles south of the South Terminal . CMAST faculty have already been involved in research projects throughout New

Bedford and the Buzzards Bay region. However, the expanded research and facilities will help position CMAST and the University as a central resource for the troubled fishing industry, as well as a new marine science industry (UMass-Dartmouth, 1996). Additional regional institutions could also play important roles in the development of a Marine Science and Technology industry cluster in New Bedford:

- **Woods Hole Oceanographic Instrumentation (WHOI --** develops new technology and the research staff is available for contract research to private firms. It also has a marine policy unit that does research on marine technology markets and policy. (NMFO, 1992).

- **University of Rhode Island** Graduate School of Oceanography -- Recognized as one of the top three marine research and development institutes in the country, a wide variety of relevant research is conducted (CMAST, 1996).

- **Massachusetts Marine Technology Manufacturing Network** -- This is a new industry organization of marine technology manufacturers, their suppliers, marine consultants and research institutions. The intent is to strengthen the marine science and technology industry in the state by developing new markets and helping companies to reduce costs.

South Terminal Aquaculture Park

Another new maritime use to target for New Bedford's Marine Terminals is aquaculture. Since the decreases in groundfish catch worldwide coincide with increased demands for fish, the prospects for aquaculture are great. World aquaculture production is estimated at $32.5 billion (FAO, 1994) while U.S. production is estimated at $810 million (NMFS, 1995). Production in Massachusetts is estimated at only $8 million (Bush and Anderson, 1993) with no production currently occurring in New Bedford.

Although aquaculture development has significant potential in New Bedford, there is very little potential for waterbased initiatives. Due to water quality concerns and

intense user conflicts, it is highly unlikely that any ocean-based, open aquaculture facilities will be attempted in New Bedford in the near future. Shellfish culture is inadvisable for the same reasons, although there is some potential for a shellfish hatchery operation (with grow-out done elsewhere). (Snow-Cotter and Soares, 1996).

Despite the constraints to developing water based aquaculture, many of the underutilized facilities in the South Terminal would be ideal for targeting inland, closed recirculating aquaculture. In particular, old fish processing plants and manufacturing facilities offer a key requirement of large, underutilized space. Already, this idea is being pursued. The first aquaculture facility in New Bedford, Trio Algarvio, an established fish processing facility in the South Terminal area, is expected to go on line later this year producing summer flounder and American eels (Downing, 1996).

The species most likely to be cultured in this environment include relatively high value species such as hybrid striped bass, tilapia, salmon, and aquarium fish. The culture of groundfish species, while experimental at this time, may soon prove to be commercially viable. The major constraint to recirculating aquaculture in New Bedford will be water quality (Soares, 1996).

Factors that bode well for aquaculture in the South Terminal area of New Bedford include the intact fisheries processing and distribution infrastructure and potential cluster of businesses to share infrastructure investments to distribute and flush out water. Also, the trained fisheries work force and the fact that the area is within the Working Waterfront Overlay are additional key advantages. Designation of the South Terminal area as an aquaculture park would allow better coordination and facilitation of the difficult permitting process. The cluster of aquaculture enterprises will benefit from the economies of scale for infrastructure investment.

Another key element for the success of the South Terminal Aquaculture Park will be linkages to the proposed Marine Science Demonstration Center offered in the Urban Waterfront Subarea plan. As described in that section, the demonstration center can

have consultant staff for resource questions, while also offering incubator space to research new potential fish species or methods of production.

Niche Shipping and Distribution Activities

If planned intermodal rail, air, and water transportation improvements are made to service the waterfront, New Bedford could finally compete with larger ports for importing, warehousing, and distribution activities. A key strategic area for growth and expansion within this industry sector for New Bedford is niche shipping and distribution. Strong market demand exists for handling and storing high-value, perishable cargo requiring refrigeration. One business alone, Maritime Terminal, could double the size of its operation and increase traffic to 60 ships a year with the necessary transportation and facilities linkages.

Unfortunately, inadequate existing transportation infrastructure and the lack of cold storage facilities have limited New Bedford's opportunity to develop a large niche shipping industry. In order to overcome the current constraints, coordination between the following initiatives should occur to link infrastructure investments with expanded distribution and warehousing activities.

Intermodal linkages-- With the planned airport expansion and rail connections to industrial waterfront sites, New Bedford can take advantage of its prime location in the Northeast to import/export goods between markets. The Intermodal Stating Area on the old railyard site will be the hub for these linkages.

Cost-effectiveness-- The lower wage levels and land prices make storage and warehousing far less expensive than larger ports, such as Boston and New York. Already, UMass Dartmouth has initiated contacts with Chinese shipping interests that are interested in lower priced alternatives than the facilities they currently use in New York City and west coast ports (Cressey, 1996).

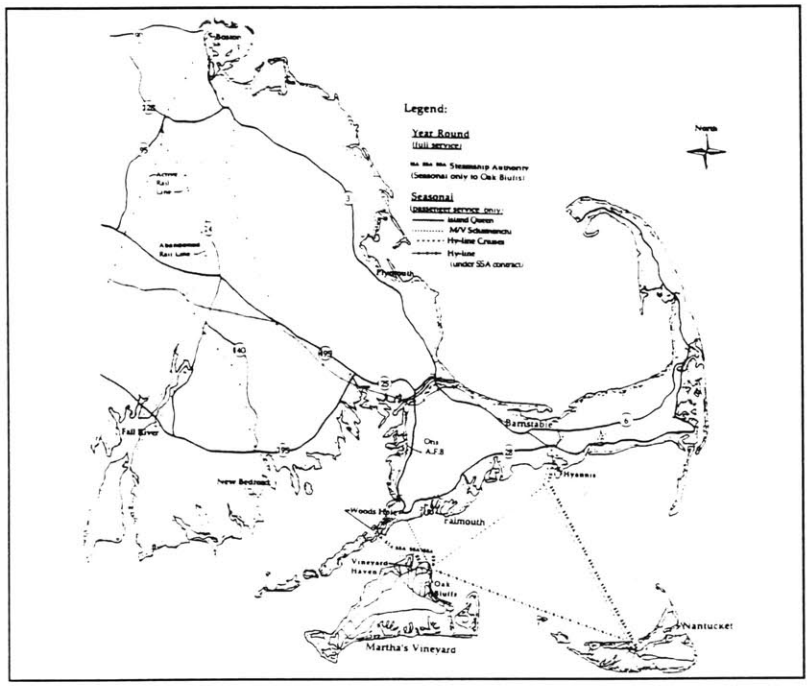
Although cargo shipping is a highly competitive industry sector, niche warehousing opportunities have growth potential and should be pursued. The large amount of vacant mills and under-utilized processing facilities in the harbor area could be

refurbished as distribution centers, at a fraction of the cost of new construction elsewhere.

Roll-On/Roll-Off Cargo -- The Seaport Bond Bill has earmarked $500,000 towards the development of a ferry-freight terminal in New Bedford. The facility will allow for "roll on- roll of" tractor trailer cargo to move in and out of the Port of New Bedford. The market for this type of cargo is more regional in scale than the large break-bulk cargo operations envisioned for the State Pier. Potential markets include the Canadian Maritimes, and the Islands.

Figure 6-9 identifies the key sites in the South Terminal area that should be targeted for warehousing and distribution activities. These underutilized sites could have strong intermodal connections to the Ferry Freight Terminal and Intermodal Staging Station, while also providing adequate areas for truck access and maneuvering.

Figure 6-10: Existing Ferry Service Between New Bedford and the Islands



7 OPEN SPACE AND RECREATION PLAN

Years of environmental contamination and industrial waterfront use have disturbed the harbor's ecology and prevented the development of open space and recreational resources. Although the increasing number of vacant or underutilized waterfront properties are visual reminders of declines in the harbor economy, they also represent key opportunities to reclaim natural resources.

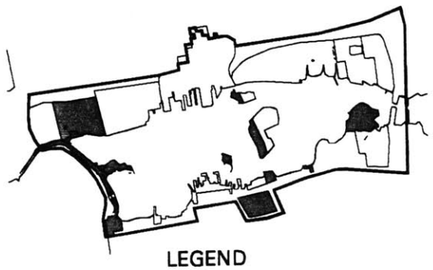
As New Bedford's harbor economy moves away from a history of heavy industrialization to a future of new technologies and information industries, introducing open space and recreation to the harbor environment will be essential. Improving the appearance of the harbor through developing open space and recreation areas would add enormous value to the harbor environment. As illustrated in **Figure 7-1**, there are a number of opportunities throughout the harbor that can expand public access to the waterfront without compromising the needs of maritime industry.

The Plan begins with a background discussion of existing open space and recreation resources, as well as possible opportunity sites. From there, three key proposals are offered:

- **Develop Recreational Boating** -- Creating new berthing facilities and expanding existing ones is possible in the harbor to serve a growing regional demand. This proposal offers an identification of existing facilites, potential new ones and a summary of important berthing requirements.

- **Conserve the Harbor Islands** -- As the most visible vestiges of undeveloped waterfront, the conservation of three harbor islands as environmentally sensitive, passive open space, should occur as a primary step towards reclaiming the Harbor's natural environment and developing resources for public enjoyment. This proposal includes a description of the existing and envisioned character of Crow, Marsh and Palmers Islands.

Figure 7-1
Open Space/Recreation



LEGEND

- Development Catalyst Sites
- Proposed Shipping Channel Dredge Disposal Site
- Underutilized/Vacant
- Tanks
- Buildings
- Water
- Planning Area Boundary
- Planning Sub-Area Boundary
- Parcel Boundary
- Roads
- Rails

Sources

Buildings and Parcels: City of New Bedford digital data.
Water Depths: NOAA Nautical Chart, 1993 (1:20,000).
Transportation-New Bedford: City of New Bedford digital data.
Transportation-Fairhaven: MassGIS digital data, 1980s (1:100,000).

N

0 312 625 1250 1875 2500

SCALE IN FEET

- **Create Palmers Cove Park --** This proposed waterfront attraction with adjacent recreation fields and Marine Science Park realizes the development potential of a large vacant site. The proposal includes a description of existing conditions, development benefits, and phased program for realizing the ambitious park plan.

Following the description of these proposals, an implementation strategy is offered. Key actors, regulations and financial instruments are identified that should play important roles to realize open space and recreation opportunities in the New Bedford-Fairhaven Harbor.

BACKGROUND

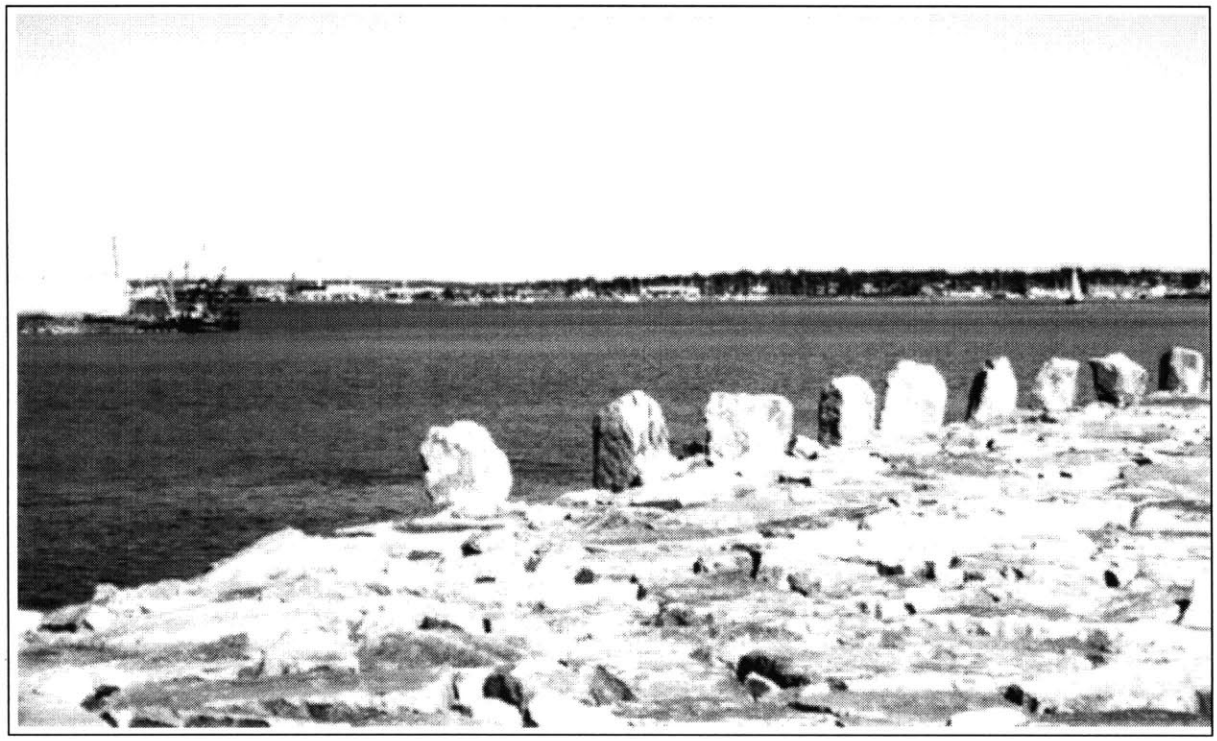
■ Urban Ecology

Increasingly, attention has been given to the sensitive ecology of the New Bedford/Fairhaven Harbor area. Although water quality remains high in most of the major rivers in the area, the Acushnet River that feeds New Bedford Harbor is facing problems of pollution. Poor water quality in the Acushnet has hurt annual shellfish harvests in waters off the New Bedford/Fairhaven area. City efforts have already improved the situation and the new sewage treatment plant in Fort Rodman will further improve Harbor water quality. Presently, the plant is near completion and will be operating at full capacity in the Summer of 1996 (Janik, 1996).

A century of industrial use left a legacy of toxic material at several locations in the Harbor. As explained in Chapter 2, the Harbor is a Superfund site for EPA remediation efforts. Although some progress has been made, questions remain over the siting of the confined disposal areas (CDFs) material. Since resolution of this problem is essential to progress on general Harbor improvements and future redevelopment, solutions that offer mutual benefits to the various interests are essential. The creation of environmentally sound open space and recreation places in the harbor offers the potential to both assist environmental remediation and improve public access.

Although the New Bedford-Fairhaven Inner Harbor waterfront is nearly completely developed with industrial, commercial and residential activity, the surrounding Buzzards Bay ecosystem contains diverse natural resources. The 432 square mile watershed is bordered by Cape Cod to the east and Rhode Island to the west. The regional ecosystem outside of the inner harbor is characterized by numerous estuaries, sandy coves, and broad tidal marshes. These waterways are productive spawning grounds and popular spots for fishing. Additionally, there is a large network of coastal streams and wetlands that reduce inland flooding in the region (Buzzards Bay Project, 1991).

Figure 7-2: View of Hurricane Barrier

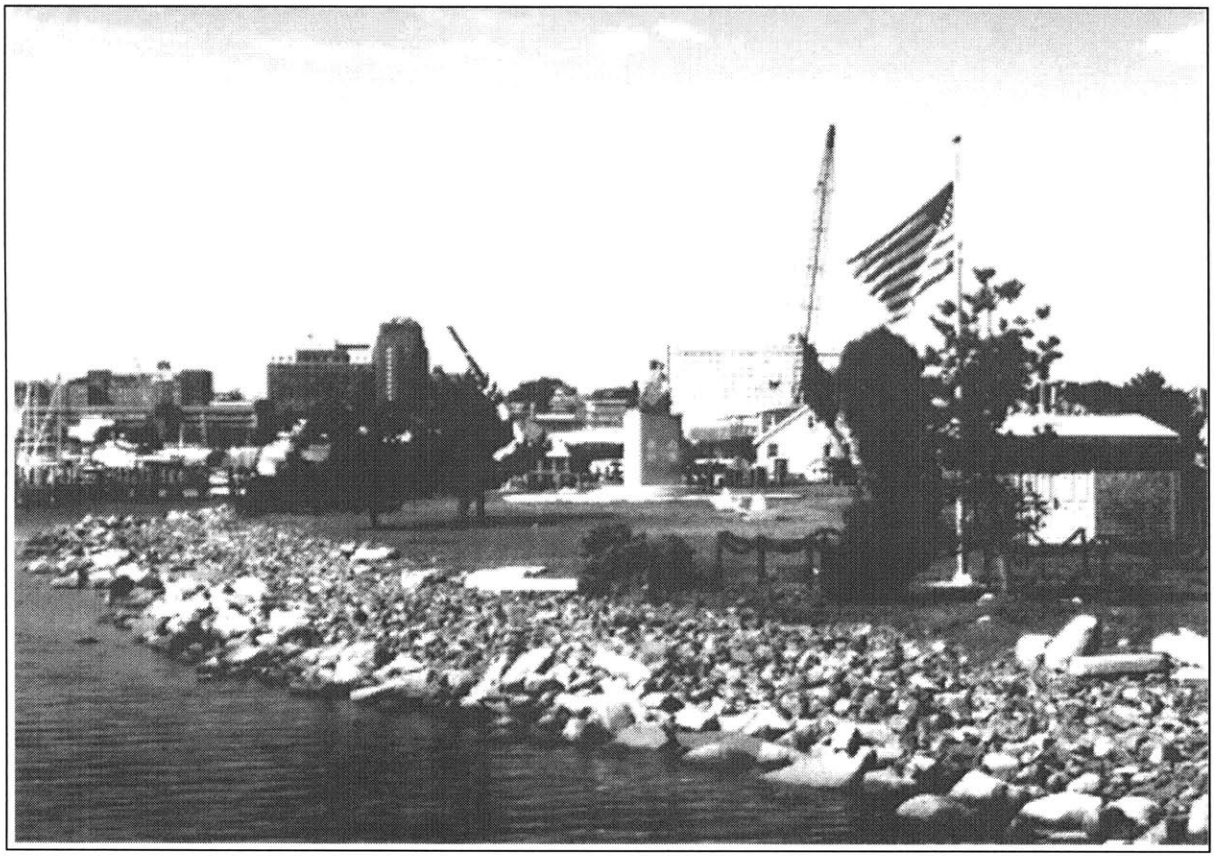


■ Existing Open Space Resources

Currently the waterfront is largely inaccessible to the public, since it is fully developed for industrial, commercial or residential uses on both the New Bedford and Fairhaven sides of the Harbor. Open space resources on the waterfront are limited to the Hurricane Barrier and the Fort Phoenix State Park on the Fairhaven side of the harbor.

The Hurricane Barrier is an impressive structure that has an access road on top of the filled dike to provide limited public access and impressive views of the Harbor. The Barrrier, built in 1963-65 at a cost of $18.2 million, is the single largest stone structure on the East Coast. The two gates weigh 440 Tons and take 12 minutes to close during periods of strong storms (HDC, 1996). The other open space resource, Fort Phoenix, is a 23 acre state park located adjacent to the Fort Phoenix Civil War Historic site. The popular park includes a beach and other recreational facilities that attract both local visitors and tourists.

Figure 7-3: Existing Open Space on Pope's Island



Along with these resources are a series of popular recreational marinas distributed around the Harbor. These marinas are mainly concentrated at Pope's Island and along the Fairhaven waterfront. In addition to the shoreside recreation space are supporting services for recreational boaters. For instance, the 9.7 acre site of Pope's

Island Marina offers a fully landscaped marine park furnished with park benches and picnic tables.

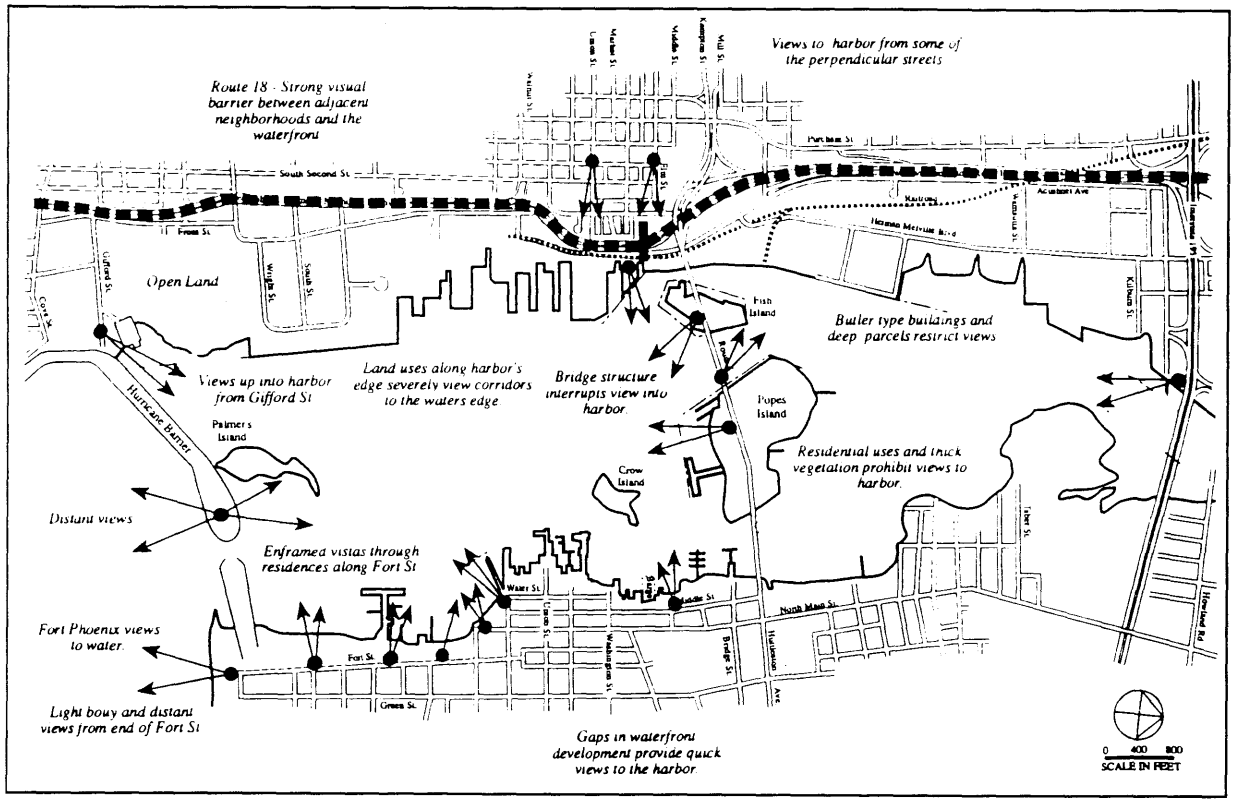
■ Potential Open Space Resources

In order to build upon these resources, additional sites need to be identified that can contribute to an open space and recreation network throughout the harbor. Presently, a number of vacant or underutilized sites do exist. These sites include the Standard Times Field, Palmers Island, Crow Island, the southern portion of Fish Island, and Marsh Island. As identified in **Figure 7-4**, these sites are also well located to take advantage of harbor views.

The challenge in developing these sites for open space or recreation is the fact that these sites are under the control of both public and private interests. Municipal ownership includes Palmers Island and a portion of the Standard Times Field that is owned by the City of New Bedford. New Bedford's HDC manages the southern portion of Pope's Island. Additional public ownership includes the U.S. Army Corps Of Engineers which manages the Hurricane Barrier, and the Commonwealth which owns and operates Fort Phoenix State Reservation and Beach. Private ownership includes Crow Island and portions of Marsh Island.

Figure 7-4: Recreational Boating Slips at Pope's Island

Figure 7-5: Harbor Visual Analysis



OPEN SPACE AND RECREATION PROPOSALS

The successful development of an open space and recreation system in the harbor requires the creation of both active and passive places. Reclaiming the harbor islands as naturalistic, passive open space is one element, while expanding and creating additional sites for active recreation is the other key element of the strategy. The following proposals suggest **developing recreational boating facilities**, **conserving the harbor islands** and **creating the Palmers Cove Park** to expand open space and recreation opportunities in the harbor.

■ Develop Recreational Boating Facilities

Recreational boating has strong growth potential and is a significant opportunity for recreation development in New Bedford. This demand is demonstrated through the general increase in recreational boating statewide in Massachusetts from approximately 170,000 in 1977 to over 340,000 in 1994 (Cavanaugh, 1995). Southern Massachusetts ports are facing increased demands for berthing spaces that are typically priced 60% less than rates in the Boston area (Manley, 1996).

The potential for growth in recreational boating in New Bedford remains strong because of the harbor's significant advantages. These advantages include a large, protected anchorage; complete harbor facilities for boat outfitting, repair, and maintenance; large capacity for marina expansion; easy access from large population centers in New England; and superior proximity to Buzzard's Bay, the Islands, and Cape Cod. In addition, the potential for strong tourism attractions in the area will only add to the Harbor's appeal.

An additional advantage for the growth of recreational boating in the harbor is cost competitiveness. According to a 1988 Cambridge Systematics, Inc. study, Fairhaven marinas charge approximately $25 to $30 per foot per season compared with $90 per foot per season in Charlestown, a marina inside Boston Harbor (Cavanaugh and Lewis, 1990).

With the significant long term demand for recreational boating in Southeastern Massachusetts, expansion potential for the New Bedford Harbor is strong. This expansion is more likely to be limited by physical and environmental constraints than by market limitations.

In addition to the recreational resource it offers, expanded marina facilities in the New Bedford Harbor can provide economic growth for supporting services. Marine service and repair benefit from recreational boating activity. As the number of commercial fishing vessels decreases, the loss to the service industry may be offset by demand from an expanded recreational fleet. Boaters are also potential customers for restaurants, tourist attractions, cultural institutions, and retail businesses. Since most marina patrons in New Bedford are already from out of town, increasing the amount of traffic will mean an influx of spending into the local market.

Existing Recreational Boating in New Bedford Harbor

The existing recreational boating facilities in New Bedford Harbor provide dockage, moorings and services for power and sailboats between 20 to 100+ in feet. Recreational vessels have increased in the harbor since 1993 from 950 to between 1,000 and 1,200. Of the 10 marinas in the harbor, four are in Fairhaven and six are in New Bedford. Additionally, there are 60 commercial berths that are sometimes used by recreational vessels on the Fairhaven side of the harbor (HDC, 1996).

The marinas in the harbor are centered at Pope's Island (355 slips), a publicly owned facility managed by the HDC. Additional facilities incluce recreational marinas (385 slips) distributed along the Fairhaven waterfront. Other vacant sites with adequate water depth in the sub-area could potentially accommodate additional recreational boating facilities. Public boat Ramps are located at Pease Park in Fairhaven, and at Gifford Street in New Bedford.

Despite the construction of the large, city-owned Pope's Island Marina in 1993, demand for recreational boating remains very strong in New Bedford. Marty Manley, Manager of Pope's Island Marina at the New Bedford/Fairhaven Harbor reports that his marina is full during the season (from May through November) when it is open, and charges for slips range up $40 per linear foot for the season. Another

significant facility, the Sesuit Harbor Marina, has a waiting list of 210 names, equivalent to a five to seven year wait at the current turnover rate. With a rate of $40/foot, or a minimum seasonal charge of $800, the facility is also far below rates in the Boston area (Manley, 1996).

In addition to the demand for marina facilities for typical recreational vessels is the overlooked market of large cruising vessels. Marina operators in New Bedford and Fairhaven suggest that the highest demands today are for the largest class of boats (40-60 foot) sportfishing and cruising power vessels. Presently, local marina expansions have helped to meet the need for larger boats. The Seaport Marina expanded the capacity of its slips to 25 to 30 foot vessels, while the Pope's Island Marina in 1993 began to offer 190 slips for vessels ranging in length from 24 to 40+. Although these expansions have been begun to meet the needs for large vessels, the largest class of boats (40-60 foot) sportfishing and cruising power vessels still do not have adequate berthing space to meet demands.

Marina Siting Considerations

In siting a new recreational marina, several factors must be considered. Despite the considerable amount of underutilized waterfront space in the harbor, regulatory, movement, and shelter considerations severely limit the potential sites for development. The key requirements include:

1) A draft that is deep enough with docking facilities at the right height to accommodate different sizes of vessels;

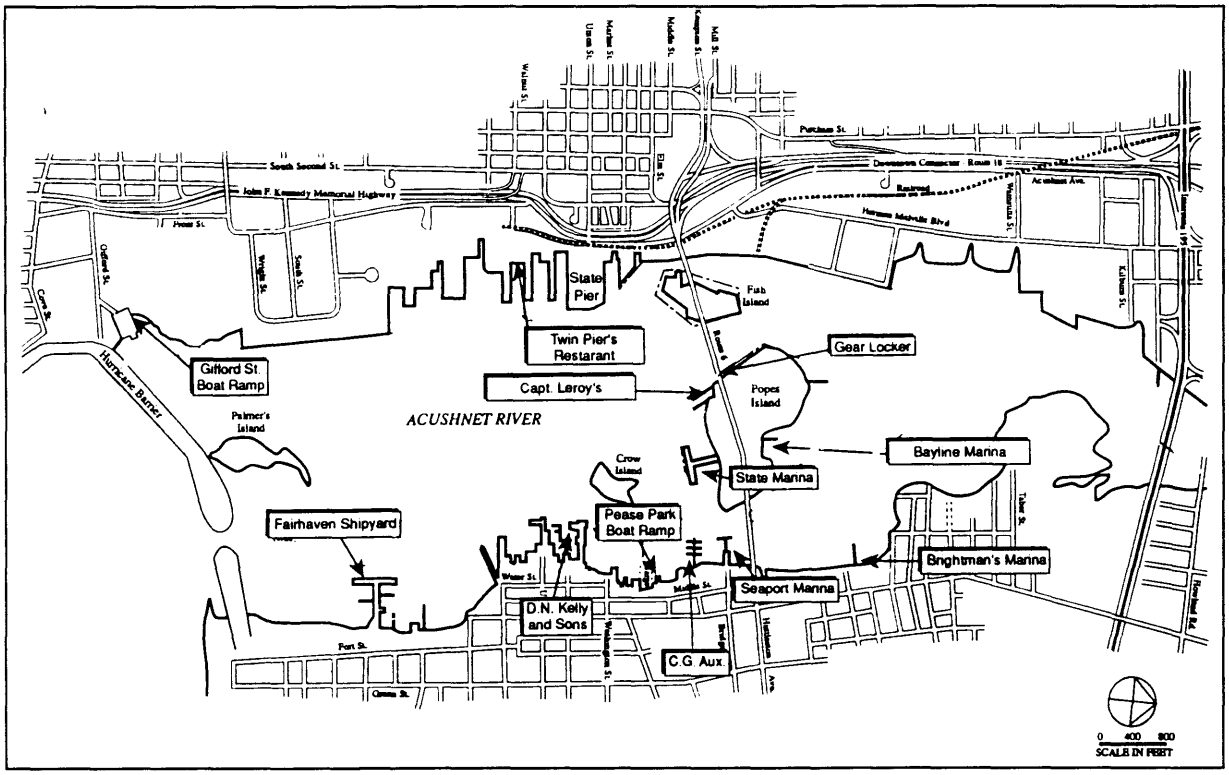
2) the location must be accessible by land;

3) the location must have adequate water depth to provide safe passage for recreational vessels;

4) Marina sitings should not conflict with established harbor circulation movements for cargo or commercial fishing vessels

5) Any recreational marina sited in the inner harbor must be outside the DPA, or a location that has potential to be de-designated from the DPA;

Figure 7-6: Existing Recreational Boating Sites



Proposed Recreational Boat Berthing Sites

New recreational boating should include the expansion of existing facilities, new marina sites, and temporal sites within the harbor that can also be used for commercial fishing berthing.

New sites -- These locations should be out of the circulation patterns of commercial vessels and not in the DPA. As mentioned earlier, marinas are strictly forbidden within the DPA. The only sites within the DPA that offer genuine potential as marina sites are those that can be de-designated because of constraints to developing maritime industry, such as the Standard Times Field.

The greatest opportunities for new marinas are sites along the derelict portion of South Fish Island, or north of the Wamsutta Mills complex. The Inner Harbor location described below illustrate the potential to link new recreational marinas with additional commercial development.

- **Inner Harbor Marina** Located adjacent to a large vacant property that is developable, this opportunity site could eventually be developed as a marina/convention center/hotel development if dredging is done to improve the shallow draft. Without the constraint of maritime shipping in the area, the Inner Harbor Marina could possibly be expanded over time as demand arises. A key constraint to consider is the height restriction created by the Interstate 195 Bridge. This constraint will likely preclude sailing vessels with large masts from accessing the marina.

- **South Side of Fish Island --** This site should be eventually redeveloped as a mixed-use attraction in a similar vein to the proposed Palmers Cove Park. Since the site is within the DPA, there are similar constraints on the construction of a traditional recreational boating marina. Although the site is currently within the DPA, the fact that the shallow draft seriously constrains maritime industrial development leaves the potential to de-designate the site. The key will be to construct docking infrastructure that could handle both medium-scale commercial fishing and recreational vessels.

Transient Berthing

The fact that some commercial fishing and recreational boats already share berthing space along the Fairhaven side of the harbor shows that they are not mutually exclusive. The key is good planning of circulation and facilities sharing. Because the fishing industry is presently in a decline, this potential should be seriously considered. For at least the next five years, industry declines and new boat buy back programs are likely to increase available recreational berthing spaces in the harbor.

Palmers Cove Park, South Fish Island, Twin Piers and Steamship Pier could become locations for transient berthing in the harbor. This use of the facilities will meet the demand for increased visitor transient berthing, while absorbing some of the over-capacity of harbor docking facilities that will likely increase. In particular, the transient berthing market should target large yachting vessels that have limited berthing opportunities in recreational marinas. An innovative strategy may be to

construct new facilities to meet this current need for large vessels and then turn over the docking facilities later to a resurgent commercial fishing industry.

- **Palmers Cove Park:** The proposed Palmers Cove Park development could develop docking facilities for lobster draggers that could also become transient berthing for recreational boats during certain seasons or industry down cycles.

- **Steamship Pier:** As the proposed staging point for ferry service within and outside the harbor, the site would also be ideal for berthing large yachts and vessels visiting the harbor. The key for berthing both commercial and recreational boats at the pier is successful management of use and access.

- **Twin Piers:** The area between the two wharves, Leonard's and Homer's, was formerly occupied by a restaurant with about 10 transient slips for overnight recreational vessels. As the adjacent Whaling Stop attracts tourists to this area of the waterfront, the restaurant and slips should prove to be a popular location again for recreational boating.

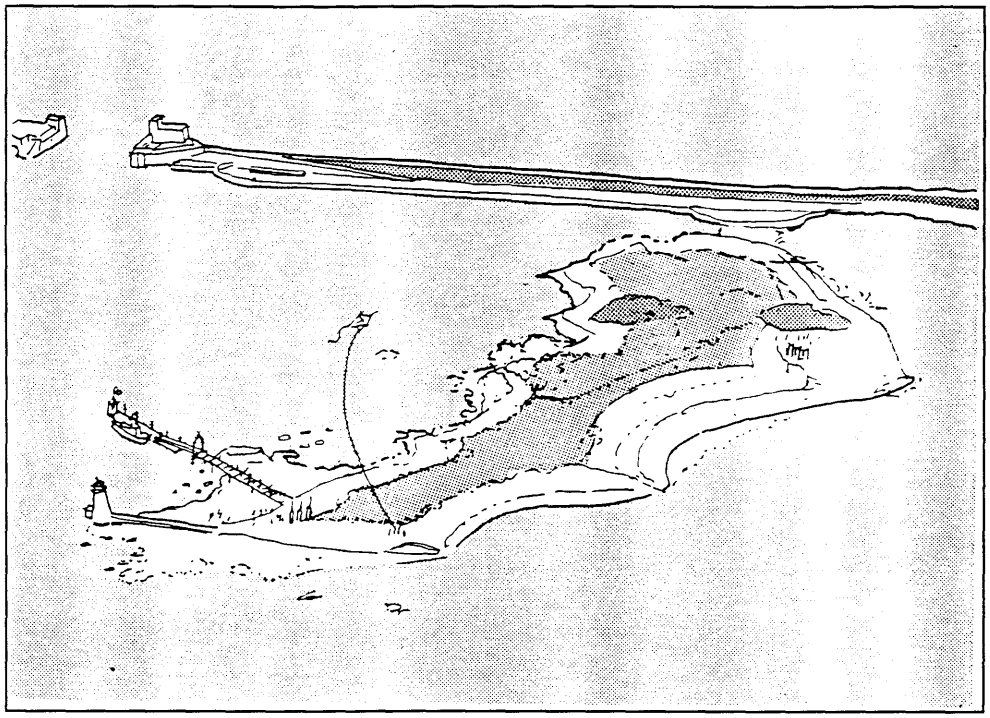
- **South Fish Island:** The redevelopment of this portion of the island should be as a mixed-used development that includes berthing facilities for shallow draft commercial vessels and transient berthing for recreational boats. Supporting facilities, such as parking for 50 cars and a boat launch would be additional site amenities.

Expanded Sites

In addition to the creation of transient berthing facilities and new marinas, recreational boating opportunities can also be expanded atexisting marinas. In particular, the cluster of marinas at Pope's Island could take advantage of shared support services in expanding their operations. Each of the following existing marina's at Popes Island could support some limited expansion and improvement of their existing facilities:

- HDC Marina: approximately 200 vessels
- Bayline Marina: approximately 50 vessels and 5 moorings
- Gear Locker: approximately 75 vessels
- Captain Leroy's: approximately 50 vessels and 25 moorings

Figure 7-7: Vision of Palmer's Island



■ Conserve the Harbor Islands

The conservation of three harbor islands as environmentally sensitive, passive open space, should occur as a primary step towards reclaiming the Harbor's natural environment and developing resources for public enjoyment. The harbor islands represent some of the last vestiges of undeveloped waterfront in the harbor.

The Historical Island: Palmer's Island and Lighthouse

Palmer's Island is an approximately six acre island that is located at the southern end of New Bedford's Inner Harbor. The Island is linked to the mainland by the Hurricane Barrier and is accessible by foot from the Barrier during low tide. At present, the Island's vegetation is largely scrubgrass. The region's geological history dates the Island to glacial origin. Granite outcroppings dominate the topography. The highest outcropping on the southeastern corner of the Island has an outstanding view of Buzzards Bay and the Elizabeth Island chain to the south. The historic lighthouse on the Island was constructed in the mid nineteenth century, but has been unused and deteriorating for nearly 30 years.

Figure 7-8: Harbor View of Palmer's Island Lighthouse

Despite the deteriorated condition of the Island, local historians claim the condition of the lighthouse is sound. Restoring the lighthouse and introducing native vegetation can allow the Island to become a harbor attraction. Local historians believe that restoring the site to its condition in the late 19th Century would include rebuilding a keepers house; removing the 1940 fog bell tower base; repairing and regrouting of the tower; restoring the iron causeway railing and repairing the causeway stonework (Camara, 1996). In addition to the development of a small pier for harbor taxi service, the restored Island should be linked to the Palmers Cove Park through improved public access along the hurricane barrier.

The Recreational Island: South Fish Island

Located west of the drawbridge on Route 6, between Popes Island to the east, and the Maritime and North Terminals to the west, Fish Island can only be accessed by

cars along Route 6. The undeveloped southern side of the island is privately owned and adjacent to a 28-foot deep Federal Channel. The shoreline is defined by bulkheads, unconsolidated fill and wharves and piers in a state of disrepair.

With an accessible location within the central waterfront, the South Side of Fish Island should be developed to draw upon the immediate area's tourism-oriented resources. The completion of maintenance dredging and clean-up of derelict vessels along the shore of the island will enable the redevelopment of the site as a marine-related facility, in combination with tourism-oriented uses.

The docking facilities could be constructed in a manner similar to those at Palmers Cove Park to be shared with both commercial fishing vessels and recreational boaters. The creation of shared berthing facilities could allow the site's use to change during commercial fishing industry cycles. A boat launch could also be included if conflicts with the shipping traffic to nearby North Terminal can be avoided.

Public access on the site is created through locating a restaurant, recreational and commercial boating facilities along the waterfront. A boardwalk connecting a restaurant and marina would provide spectacular views of the Harbor and the working waterfront environment.

The Natural Environment Islands: Crow and Marsh

The other two islands within the Harbor, Crow and Marsh, are currently privately owned but also undeveloped. Marsh Island is a 15-20 acre undeveloped green space on the Fairhaven side of the harbor, just south of I-195. The island has a large salt marsh along the perimeter edge of the area, while a good portion of the remaining site is covered by scrub growth. At approximately 4 acres, Crow Island is much smaller. Located further off the Fairhaven waterfront, the Island is also largely of full of scrub vegetation and derelict.

Restoring the natural ecology of the two islands would offer an important symbol to the greater harbor environment. In addition to becoming very visible symbols of the harbor's original ecology, the harbor islands could also support some limited interpretive development. In particular, Marsh Island could have a footbridge to the

Figure 7-9: Recreational Boating Slips at Palmers Cove Park

Fairhaven shore in a manner similar to that of the proposal for Palmer's Island. Visitors would then be led through the island along a small boardwalk that does not disturb reintroduced native vegetation. Interpretive signs could identify native Buzzard's Bay species and explain the ecology of the shoreline salt marshes that were once prevalent throughout the inner harbor.

In addition to the restoration of the two harbor islands in a natural state, there is the opportunity to develop an artificial island from maintenance dredging material. This would need to be coordinated with the efforts of the Corps that would be responsible for shaping the desired form of the island.

■ Palmers Cove Park

The location for the proposed Palmers Cove Park is along the southern edge of the New Bedford side of the inner harbor. The park will incorporate two existing properties that are under various owners. These properties include the Standard Times Field and the Hurricane Barrier. Through a creative strategy that integrates the needs of lobster dockage with waterfront access, the Palmers Cove Park would

become a romanticized waterfront park with a boardwalk and attractions that is similar to other popular New England shoreside resort towns.

The Standard Times Field site will be the focus for much of the development. Currently, it is an undeveloped area of approximately 39 acres bounded by the New Bedford Harbor and Palmers Island to the east; Gifford Street and the U.S. Army Corps of Engineers' Hurricane Barrier to the south; recreational, residential, and commercial uses along Front Street to the west; and a radio broadcast tower facility, a Commonwealth Electric transformer, and marine industrial and fish processing uses at the South Terminal to the north. The Potomska and Acushnet Mill built at the end of the 19th Century were formerly located on this site. A small City-owned boat ramp is the only public infrastructure on the site. Water depths range from -2.0 feet to below -0.6 feet below mean low water. Additional dredging of more than -8.0 feet below mean low water would be difficult due to the presence of bedrock ledge, which extends landwards from Palmers Island.

The Hurricane Barrier should provide a connection between Palmers Cove Park and Palmers Island. With an access road along it, the Barrier allows Corp vehicles to go between the Standard Times site to the gate. Negotiating public access improvements with the Corp would allow for a link to Palmers Cove Island, as well as a chance for visitors to take advantage of the great vistas.

Site Utilization

The Standard Times Field site is presently owned by various private and public interests. Warren Five-Cent Savings Bank owns 23.9 acres, New Bedford Radio, Inc. owns 10.5 acres, BHR, Inc. owns 1.9 acres, the City of New Bedford owns 1.6 acres, and the United Social Club owns 1.0 acres (HDC, 1994).

Recreational land uses presently on the Standard Times Field site include three poorly maintained ball fields and a dirt bike track that covers 11.7 acres of the site. In addition, 3 acres of land are also used for parking purposes that are related to the Berkshire Hathaway Company. The radio station keeps a radio tower on a 2.5 acre area, while the remaining 21.7 acres are vacant (HDC, 1993).

Constraints and Opportunities

Limited Marine Industrial Options -- The site has historically been dismissed for development of marine industry because of the shallow water depths and the presence of two significant navigational obstructions -- Palmer's Island and the Hurricane Barrier. Public officials have rendered the site unsuitable for a marine terminal or large-scale commercial fishing operations.

South Terminal Connections -- The proximity of this site to South Terminal increases its potential to be used for activities that support the terminal's marine-related and non-water dependent activities. As a large 39 acre site, the creation of recreational fields on the Standard Times Field can land bank the northern portion of the site for future expansion of the Marine Science Park.

Access and Circulation -- While the site provides good vehicular access to highways and the rest of the city, the waterside access is presently poor because of the shallow water depths in Palmers Cove. The site has been seen as obsolete for maritime industry because the shallow draft is bedrock and prohibitively expensive to successfully dredge. Previous estimates placed the cost at blasting the limestone ledge for adequate moorage at $20 million.

Zoning -- The Standard Times Field is zoned Industrial B which allows a wide range of commercial and industrial uses. Although zoned industrial, the site is outside of the Working Waterfront Overlay District that identifies appropriate waterfront site for maritime industry. Restrictions on the site include fish processing businesses and residential development. Development on the site will require 25 foot setbacks, a site coverage under 50%, and at least 50 feet between any two buildings on the same lot.

DPA. The site is located within the boundaries of the DPA. For Chapter 91 Waterways licenses, the landward limit of the DPA is the historic high water mark. For publicly funded activities, it is all of the mapped area. Although the site is within the DPA, the lack of deep water access and waterfront infrastructure make it a potentially suitable candidate for de-designation.

The Palmers Cove Park Program

Despite the physical and regulatory site constraints, a creative, mixed-use development proposal is possible to serve the needs of both industry and the general public. Through development of the large 39 acre Standard Times Field site into smaller, phased parcels, a number of different uses can be successfully integrated. Recreation and public attractions can be developed in the southern portion of the site, while the northern side would be seen long term as a South Terminal Marine Science Park. **Figure 7-10** illustrates the vision for Palmers Cove Park.

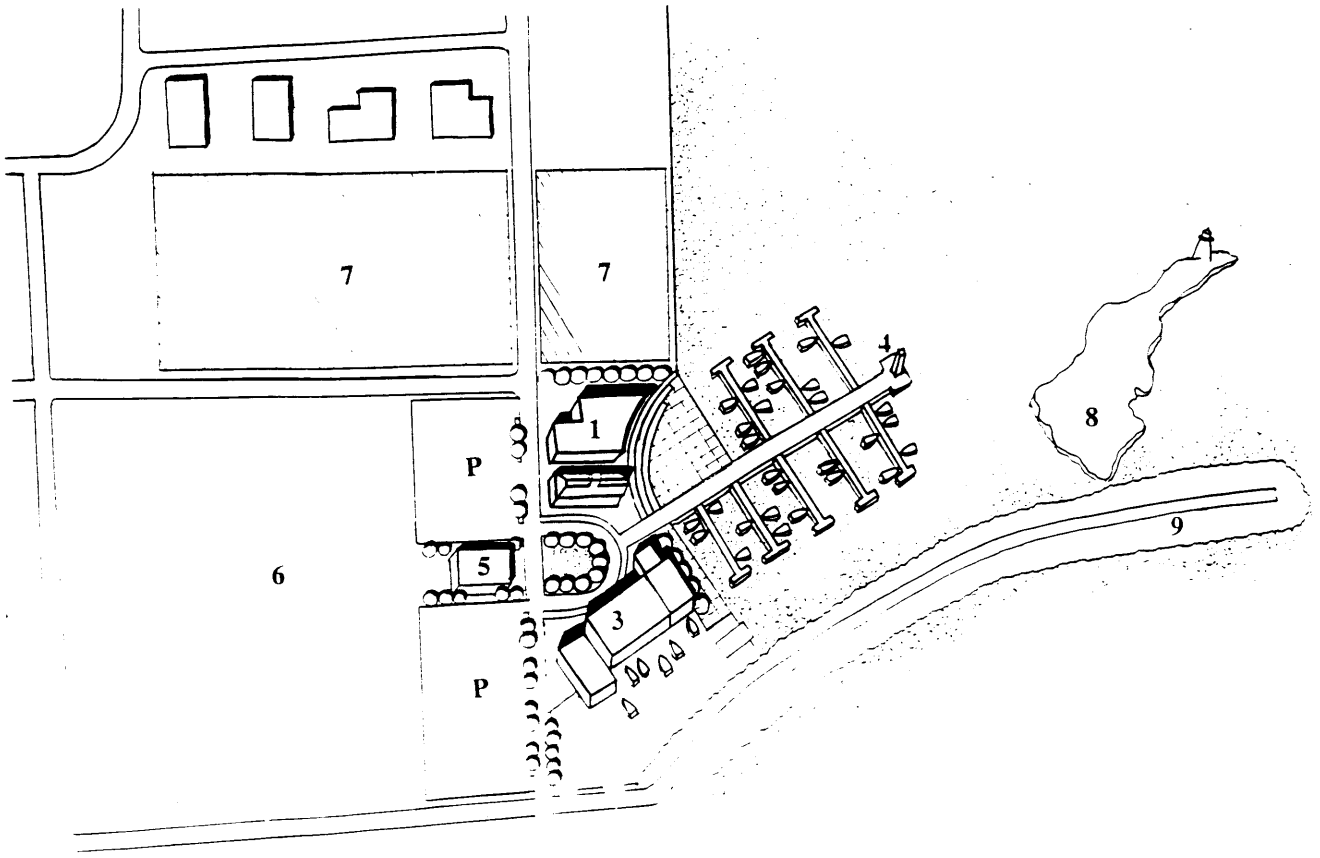
Northern Site: Marine Science Industries -- The northern portion of the site will be subdivided as a marine science light industrial park to attract the industries described in the Marine Terminals Plan. Temporary use of the property for recreational fields will land bank the site until demand warrants the subdivision of the area for marine industrial needs. Parcels similar in size to South Terminal will be platted for buildings in the range of 20,000 to 50,000 gross square feet.

A key element in the successful development of the marine science park will be extending the South Terminal bulkhead to the proposed marine science park. This can be accomplished by using the dredge material as fill. Presently, the entire Standard Times Field shoreline is in a natural condition. Dredging material fill can be used to extend the bulkhead out. The creation of this bulkhead with then eventually support berthing of vessels to serve the marine science park.

Southern Site: Recreational Facilities and Lobster Dockage -- The southern portion of the Standard Times Field site should be developed with recreational playing fields and public attractions along the waterfront. A boulevard should be developed through the site to provide access to both the public attractions on the southern parcel and the marine science park on the northern parcel.

Dredging material to extend out the shoreline in this area will help shape the character of the site. As the site conditions summary points out, the current shallow draft precludes the development of dockage. However, by using maintenance dredging to fill in a portion of the cove, two problems are solved: dredge material is

Figure 7-10: PALMERS COVE PARK PROPOSAL



LEGEND

	Public Access	4	Marina
	Marine Industrial	5	Rec. Service Bldg.
P	Parking	6	Recreation Fields
1	Shops-Restaurants	7	Marine Sciences Park
2	Lobster Coop-Service	8	Palmer's Island
3	Boat Storage-Launch	9	Hurricane Barrier

able to be successfully disposed of, while the waterfront is suddenly developable for dockage facilities.

Figure 7-11: Current View of Standard Times Field from the New Bedford Harbor Hurricane Barrier

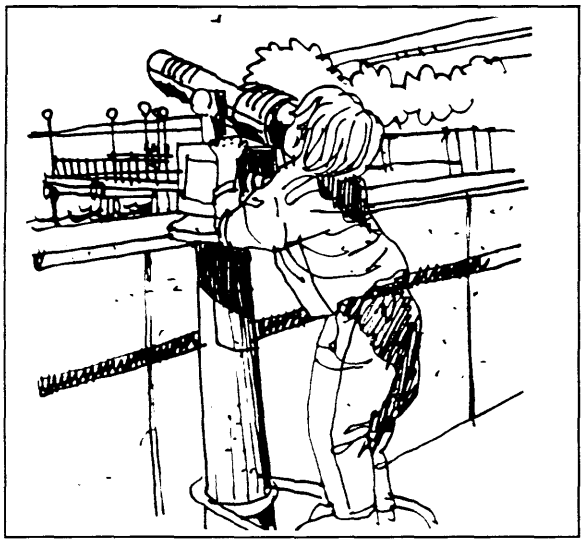
As illustrated in **Figure 7-10**, the vision for Palmers Cove is a public attraction that serves the needs of both local lobstermen and recreational boaters. The concept integrates recreational boating launching and storage with dockage space for the New Bedford lobstermen to create a compatible mix of uses.

The lobster draggers will finally have adequate facilities in the harbor, while also becoming part of the public attraction created. The lobster fishery is an important historic industry and a prime draw for people who enjoy watching a real harbor at work. But economic pressures and conflicts with commercial fishermen have been problems for the lobstermen within the Urban Waterfront area. Through developing dockage facilities in the spirit of Fishermen's Terminal offered in Chapter Two, the Palmers Cove Park will provide berthing for approximately 30 lobster boats, a landing for unloading their catch, access for pickup trucks, and space for their trap storage. A related development should be a boat storage facility constructed on the

site. Built along the southern perimeter of the site, this facility could also support the storage needs of the lobster fleet, while meeting the strong market demand for recreational boat storage.

As a complement to the lobster dockage and maritime activities in the park, the recreational facilities will serve as a draw for families to the waterfront. In addition to the creation of soccer fields, which are in high demand in the community, a boardwalk along the waterfront will be developed as a promenade and link to the waterfront plaza. Surrounding these amenities will be commerical shops, restaurants, the lobster Coop building. The restored Palmer's Island Lighthouse will also be connected to these attractions. As **Figure 7-10** illustrates, visitors will be led from the boat launch and lobster boat docking area along a trail to the Island.

Figure 7-12: Viewing the Harbor from the Boardwalk



Benefits of Palmers Cove Park

The proposal unlocks the site's waterside development potential, improves the image of the blighted area and solves the challenge of siting harbor maintenance dredging material. The shallow draft problem currently constraining development opportunities on the site is solved by bringing in dredging material along the shoreline.

An additional benefit is that the development will meet the demand for new lobster dockage facilities. As a public attraction, additional revenues and subsidies will be created to assist the lobster industry and maintain the park facilities.

An additional cross-benefit is that Palmers Cover Park could financially support and maintain the sports playing fields. A portion of the revenues generated from the boat storage and lobster dockage can be dedicated towards the development and maintenance of sports playing fields. Since the City of New Bedford Parks Department has limited funding, this subsidy income would be critical.

8 HARBOR PLAN IMPLEMENTATION

Realizing the proposals offered in the Urban Waterfront, Harbor Terminals and Open Space and Recreation Plans will require an implementation strategy that meets the needs of the various interest groups that have a stake in the harbor's redevelopment. **Figure 2-9** illustrates the relationship between these interest groups, and the corresponding regulations that must also be considered. The following implementation strategy emphasizes projects that offer mutual benefits to harbor interest groups in order to create a sustainable, mixed-use harbor economy.

This chapter is divided into two sections to explain the implementation strategy. The first section describes the key projects to pursue and phasing considerations for the three subarea plans. The second section then identifies the key actors and instruments to realize redevelopment efforts.

IMPLEMENTATION STRATEGY

■ Urban Waterfront

The multiple proposals for the Urban Waterfront will need to be carefully coordinated and phased. The proposals for State and Fishermens Pier should be given priority because the projects would have the most direct and immediate impact on the Subarea. The development of a Fish Auction and International Marketplace Center capitalize on existing harbor industries, while also serving as a destination for tourists and visitors to the waterfront.

The proposals for redesigning Route 18 as a Harbor Boulevard should also be immediately pursued because it serves the needs of both industry and tourism alike through improving circulation and public access. Besides, these initiatives have readily available funding sources. In the following discussion of key actors, more

detailed implementation information is offered for the Harbor Boulevard and Waterfront Walk initiatives.

The proposals for Coal Pocket and Steamship Piers, as well as the creation of a harbor trolley are initiatives that will take longer to fully realize. However, immediate action should be taken to consolidate ferry service on Steamship Pier and market the Bourne Counting House and Twin Piers Building to private investors for waterside commercial activity. With the increased activity generated from ferry service traffic and waterfront activity in the State-Fishermens Pier area, it should only be a matter of time before the increased visitation to the waterfront makes establishment of the harbor trolley and the creation of interpretive activities Coal Pocket Pier economically viable. Another key element to the implementation of the Whaling Port proposals is the pending national park designation, if it occurs. Besides the increased visitation to the waterfront that would occur, limited funding could become available to cover the operating expenses of the interpretive activities identified.

■ Harbor Terminals

The priority for the Harbor Terminals should be coordinating the development of the intermodal transportation centers identified as the Intermodal Staging Station and the Ferry Freight Terminal and Distribution Center. As explained in Chapter 7, these projects are the key to successful redevelopment of the Terminals.

The proposal for the Intermodal Staging Station, as illustrated in Figure 2-8 could be financed through the MBTA, City or HDC bonds and revenue from the sale of the two industrial and two commercial development parcels created.

An important complement to the Intermodal Staging Station adjacent to North Terminal is the creation of the Ferry Freight Terminal and Distribution Center adjacent to South Terminal. Since Commonwealth Electric Company has offered the site to the City, the costs of the project will be limited to construction and site preparation. The $500,000 in the Seaport Bond Bill towards the effort should be one source of funding, while capital costs could also be covered by the City or HDC bonds. Operating expenses could be met through using the terminal for Steamship

Authority freight service to the Islands, and marketing the Terminal as a distribution center to underserved roll-on/roll-off cargo markets.

Following the investments in the intermodal transportation network, the other proposals for the Urban Waterfront can be realized. The Marine Science and Technology Park adjacent to South Terminal should be developed first, while the second location on the CDF #7 site will be realized in a later phase when the site becomes developable. Laying the groundwork to create the South Terminal Aquaculture Park will require the city expediting the permitting process for prospective businesses and linking them to sources of capital.

■ Open Space and Recreation

The fundamental challenge in implementing the Open Space and Recreation Subarea plan is obtaining ownership or management of properties and the funds to develop the initiatives. In contrast to the plans for the Urban Waterfront and Marine Terminals, the creation of open space and recreation amenities will not generate significant revenues that can entice the private sector to take the lead. In order to foster the necessary public/private cooperation to expand open space and recreation amenities in the harbor, a creative strategy is needed to leverage public investment dollars.

Immediate attention should be given to getting the multiple parcels that make up the Palmers Cove Park proposal under single ownership or creating a development agreement. At the same time, negotiations should occur with the Army Corps of Engineers to coordinate the dredging fill of the cove with shoreline improvements. A bulkhead should be created along the northern edge of the property to serve the Marine Science Park, while a boardwalk, boat dockage and boat launch will be created along the southern portion of the site. HDC should take the lead in covering the capital costs for creating the dockage facilities for the lobstermen and boat storage. Leasing revenues will then cover the operating expenses. Private development interests will then be involved in creating the commercial developments, including a lobster restaurant, on the property.

Efforts to reclaim and restore Marsh and Crow Islands to a natural environment will then occur in later phases. Since funding opportunities are limited, the HTC

endowment is an important source of funding to pursue. The initiative to purchase and restore Marsh and Crow islands to a natural state very clearly fits the criteria for receiving a portion of the funds earmarked for environmental restoration efforts. Through this grant money, the restoration of the island salt marshes and vegetation can be financed, along with the construction of a boardwalk and small pier for boats visiting the Islands.

The other open space and recreation proposals to expand public access and recreation at Palmers Cove and Palmer's Island fulfill another aspect of the HTC agenda to "improve the accessibility and use of the harbor environment." Grant money received for these developments should prioritize the construction of recreation facilities, site amenities, access improvements along the Hurricane Barrier, and restoration of the Palmers Island Lighthouse.

KEY IMPLEMENTATION ACTORS

■ Department of Environmental Management (DEM)

DEM should be the key actor leading the redevelopment of State Pier, which it manages. Financing the key infrastructure improvements identified should involve the combination of funds from the Seaport Bond Bill and leases from privatized management. With the successful precedence established in leasing Gloucester's State Pier to the Massachusetts Land Bank, DEM should consider this as a viable option. The key principle to any public/private redevelopment of the State Pier should be maintaining public access along the Pier, and the development of the International Marketplace on the southwestern corner of the site.

If management of the State Pier is privatized then the capital improvements to the existing warehousing facilities and construction of the cold storage and International Marketplace could be realized through long term leases to private investors. Maritime International has already expressed interest in constructing a cold storage

facility on State Pier. The other proposed developed, the International Marketplace, would generate operating revenue through the sales of goods sold trade shows and conferences that could occur at the building.

■ Harbor Development Commission (HDC)

Urban Waterfront

HDC should play the key role in realizing the Fishermen's Pier Auction Display and Market. With the pier already owned by HDC, efforts should focus on leveraging Seaport Bond Bill funds and HDC bonds to finance the construction of the Fish Auction. The $500,000 earmarked in the Seaport Bond for the electronic auction, along with HDC and Seafood Council contributions, should cover the capital construction costs. Revenues generated from fishing wholesalers and operators using the electronic display, along with leases to vendors at the tourism oriented on-site fish market should support the operations once established.

HDC should also take the lead on redeveloping the Twin Piers area. Money towards site amenity improvements, improved transient berthing facilities and the rehabilitation of the existing restaurant building are key. With the proposed investments to the adjacent historic attractions, site improvements to the Twin Piers commercial building and pier would complement the proposed investments to the adjacent historic attractions. With increased tourism activity in the area, the HDC investments should be largely covered through new leasing revenues.

Harbor Terminals

As the primary property owners in the existing North and South Terminals, HDC will play the key role in repositioning these industrial parks. The bonding and borrowing power of the Commission should be used to supplement Seaport Bond Bill infrastructure investments. Immediate HDC efforts should include the access and circulation improvements identified, as well as the development of new warehousing and distribution facilities at the proposed Intermodal Staging Area and ferry-freight terminal. Increased lease revenues from attracting new maritime industries to the Terminals can then be used towards further investments and the

development of Marine Science and Technology Parks on the northern side of the Standard Times Field and the CDF #7 Site.

Open Space and Recreation

Since most of the land in the Subarea is owned by HDC, the agency should play the key role in leading redevelopment efforts. The agency's immediate efforts will focus on developing docking and boat storage facilities, while the later role of the agency will be guiding the development of the Marine Science Park.

Since the lobster docking and boat storage facilities offered for Palmers Cove Park will ideally be under HDC's leasing control, the agency should take the lead in financing the construction of these facilities. As explained previously, HDC supports the moving of lobstermen from Steamship Pier because of existing site conflicts with commercial fishing vessels there. Along with the new dockage facilities, HDC should coordinate the development of the new boat launch and storage facilities along the southern portion of the site.

With the strong market demands for both initiatives, it is reasonable that HDC can either borrow funds or issue municipal bonds to pay for the construction costs of the docking facilities and boat storage buildings. Similarly, HDC can use the same financial tools to realize the development of the Marine Science Park in later project phases.

■ City of New Bedford

Urban Waterfront

Access and Circulation Improvements -- The City of New Bedford will be the primary actor in realizing most of the improvements identified in the Linked Waterfront descriptions. The City should manage the redesign of Route 18 as the Harbor Boulevard and the creation Waterfront Walk, as well as identify primary funding sources for these efforts. One important source of funding for the redesign of Route 18 is a Federal Highway Administration grant for "traffic calming" highways in sensitive urban areas. The historic waterfront that the limited access highway currently severs certainly qualifies for this funding source. Additional funding for the effort could come from set asides for ISTEA Enhancements and the

revenues generated from paid parking that could be created along portions of the former highway rights-of-way.

The creation of the Waterfront Walk should be realized through negotiations with private land owners to establish the necessary site amenities, whenever possible, as well as grant funding. Potential funding sources include a grant from the Harbor Trustee's Council restoration fund; the CFIP state grant program; and the state's Community Development Action Grant program, or CDAG. This program provides cities with funds for public improvements which will leverage specific private investments. The Waterfront Walk can certainly be packaged as such a public/private collaboration if the owners of abutting maritime facilities agree to upgrade their facilities and donate public easements.

Financial Incentives -- The City should also take the lead in offering essential financial incentives to facilitate the redevelopment of the Urban Waterfront. Establishing the State Pier as a Foreign Trade Zone is essential for the success of increased international cargo operations and the development of an Marketplace with duty free goods with FTZ warehousing and display incentives. Additionally, the City should designate the entire Urban Waterfront an Economic Opportunity Area (EOA) in order to take advantage of state tax incentives for business development.

Marketing and Tourism -- Developing the interpretive resources of the Urban Waterfront will require active management efforts by the City's Marketing Director and Director for Tourism. These offices should play a vital role in guiding the public/private development of the Fish Auction and State Pier Marketplace, as well as the commercial component of the Coal Pocket-Steamship Pier development.

An additional role for these offices should be the marketing and promotion of the waterfront attractions. For instance, maritime-business related travel is growing. As New Bedford solidifies its standing as a marine sciences center, it should have excellent potential to attract visitors to trade shows and special industry events. The Offices of Tourism and Marketing should actively promote shows related to the seafood or marine manufacturing industries.

Harbor Terminals

New Industry Support Network -- In order to foster the new industry clusters related to marine science technologies and aquaculture, a key implementation strategy will be expanding the work of the City's Office of Economic Development to coordinate with established regional resources that can provide valuable technical support and direction.

The proposals offered for the Harbor Terminals represent a departure from traditional industries in the community. The expertise of the following agencies will be essential for the new marine science and aquaculture industries to take seed.

Marine Science and Technology -- The Office of Economic Development should be responsible for communications with the Massachusetts Marine Technology Manufacturing Network, Woods Hole, and UMass Dartmouth's Center for Marine Sciences and Technology. In this way the city can become a key contact that can direct local businesses in this industry cluster to the necessary resources

Aquaculture Office -- The Office of Economic Development should also help the fledgling local aquaculture industry to prosper. The key regional resources for this effort will be SERPDD and their aquaculture specialist and CZM, which also has staff expertise in the aquaculture industry. The key role of the coordinating City agency will be to assist new businesses through the very difficult state permitting process, as well as to direct new businesses to people who can offer technical operational support.

Financial Incentives -- In addition to coordinating technical support for new industries, the City should also take the lead in offering essential financial incentives to foster new industries for the Harbor Terminals. Two key initiatives are designating the Harbor Terminals as Economic Opportunity Areas (EOA) and Foreign Trade Zones. The EOA designation would offer important tax credits and TIF financing to realize the Marine Science Park on the CDF #7 site, while the Foreign Trade Zone designation would offer additional business development incentives. The importance of the FTZ designation will be in the realization of the

shipping and distribution initiative, as well as the development of the Marine Science Technology Park.

■ Private Developers

Urban Waterfront

The public investments to the infrastructure and facilities in the Urban Waterfront should create significant private sector development interests. On State Pier, the Marketplace Center should be developed through a public-private arrangement. The City should be responsible for site preparation and amenities, while the private sector should finance the construction of the mixed-use commercial display and cruise ship terminal center. Private development interests will also be attracted to the commercial development opportunities along the restored Coal Pocket-Steamship Pier area. Existing vacant facilities ready for private commercial redevelopment area already present in the Bourne Counting House and the former Twin Piers Restaurant.

Harbor Terminals

Once the intermodal transportation improvements are made, private investment is likely to be attracted to the Terminals. The creation of two marine science and technology parks should attract investment to the development sites that will be created, while the Buzzards Bay Aquarium should leverage a public-private arrangement between the City, UMass-Dartmouth's CMAST and private development interests.

Open Space and Recreation

Private/public partnerships will be critical to successfully realizing the open space and recreation opportunities for the harbor. Private developers will primarily be involved in the development of Palmers Cove Park and the Marine Sciences Park.

In the initial phase of Palmers Cove Park, developers should work with HDC to develop the public attractions of the Park. These public attractions should include a small mixed-use commercial building and site attractions such as a carousel, which would complement the HDC investments in a boardwalk and dockage facilities.

Ideal tenants for the commercial project include a restaurant with a theme related to the lobster fishing based at the site.

In later phases of the Plan, developers will be able to lease parcels in the new Marine Science Park for build-to-suit office, warehousing and light manufacturing businesses. HDC should creatively leverage the leasing revenues from these parcels towards the development and maintenance of the adjacent recreational facilities.

Private developers will also play a key role in redeveloping Palmers and South Fish Islands. In the early phase of these efforts, private development dollars should be sought for Palmers Island to rebuild the Keepers House and turn it into an Interpretive Center related to the Lighthouse.

■ Historic District Commission

The agency should play an important role in coordinating the restoration of the historical resources at the Coal Pocket and Steamship Piers. As an existing National Register District, the area is already under the control of the Commission. The Commission should use the increased revenues from commercial activities in the Bourne Counting House and re-established ferry service from Steamship Pier towards necessary site improvements, such as the Waterfront Plaza Park, and interpretive activities at Coal Pocket Pier. The Commission should also play a key role in working with the existing Whaling Museum to bring portions of their stored collection down to the waterfront site as attractions.

APPENDIX: SUPPORTING HARBOR SUBAREAS

In addition to the three subareas that have been the primary focus for this thesis, are the following three subareas which play a supporting role in the harbor economy. The following summary identifies key issues and possible directions for the **Commercial Islands**, **Mill Zones**, and **Residential Subareas** in the New Bedford-Fairhaven Harbor.

COMMERCIAL ISLANDS SUBAREA

This sub-area includes isolated pockets of marine commercial and support activities which dot the Harbor. Divorced from surrounding uses, these pockets of activity are essential for maintaining and servicing the fishing fleet, and other marine actives and vessels. Included in the area are North Fish Island, North Pope's Island, and marine service areas of Fairhaven including Lindbergh Marine and the Fairhaven Shipyard.

The "island" sites offer deep water access and convenience. Important waterfront infrastructure at the sites include marine railway and travel lifts and large backland areas for the storing of vessels and service equipment. The marine services provided at these sites include the maintenance and repair of commercial and recreational vessels and their associated equipment. Additional services provided at the sites include carpentry, painting, and the rigging of boats. The area is largely characterized by small steel or wood storage structures sitting on service piers or wharves. Important equipment at these facilities include cranes, oil storage facilities, and marine travel lifts that transport ships onto piers for maintenance and repair.

■ Land Use

Most of the existing boat yards and marine service facilities in the Harbor are located on the Fairhaven side of the Harbor. The primary facilities include Lindbergh Marine, D.N. Kelly and Son Wharf, and the Fairhaven Shipyard. Additional marine service facilities are located on Pope's Island.

Commercial service facilities that support the fishing industry are concentrated on Fish Island and Pope's Island. These marine-related commercial services include the supply of radio and navigation electronics, marine supplies, and the sales of hulls, propellers, engines, fuel and ice.

North Fish Island is a fully developed site. It contains steel oil storage tanks and steel industrial buildings, as well as open maneuvering space. The north side of Pope's Island is developed to a lesser extent. It contains a series of buildings fronting Route 6 with open land to the rear which is used to store vessels.

These sites are also commonly used for berthing, as well as service. The total amount of docking capacity provided by all the sites in the sub-area is 90 spaces for commercial fishing boats . These spaces are primarily located on the Fairhaven islands and include the following sites: D.N. Kelly & Son (40), Union Wharf (15), Hathaway-Braley's Wharf (5), and Fairhaven Shipyard (30). Berthing for 70 ± commercial vessels is provided at Kelley Wharf, Fairhaven Shipyard and the Town of Fairhaven owned Union Wharf

■ Ownership and Utilization

In contrast to other waterfront parcels in the Harbor, nearly all of the property within the Commercial/Marine Service is privately owned. Vacancy and utilization varies considerably within the sub-area. Currently, the sites located on Pope's and Fish Island have the highest levels of vacancy and under-utilization. Reconstruction of the Route 6 Bridge has temporarily restricted vehicular access to these islands, and consequently added to the problem. Several vacant buildings front Route 6, while substantial portions of the north side of Pope's Island contains underutilized parcels.

The marine service piers and marinas on the Fairhaven side are well utilized. There is actually excess demand for slips in the recreational boating marinas.

■ Issues Facing the Commercial Islands

New Markets

As fishing has declined, there is a growing need for commercial service businesses to diversify their client base. Servicing recreational boats and providing facilities for

storage and maintenance is one avenue (eg. Pope's Island) to broaden the development potential of the commercial islands.

Constrained Sites

Due to the physical situation of these areas, there is virtually no room for future growth and expansion of service businesses should the demand arise. This will require careful planning and conservation of sites which do exist. In Fairhaven, the impact of any changes to these areas on surrounding residences will need to be considered.

Access and Circulation

Vehicular access to the service islands on the Fairhaven side is constrained due to narrow roads and adjacent residences. Perimeter circulation improvements are needed and should consider both the daily activities of ship service facilities and neighborhood access needs. An additional access problem is the impacts of the Route 6 Bridge on land transportation.

THE MILL ZONE SUBAREA

The Mill Zone sub-area is composed of two areas that are located on the north and south edges of New Bedford's waterfront. As "bookends" to the waterfront, these sites contain large, 19th Century brick industrial buildings which once housed the Berkshire Hathaway Mills on the south side of the Harbor, and the Revere Copper Company and the Wamsutta Mill on the north side of the Harbor. The textile mills are an important part of New Bedford's rich history. The Wamsutta Mills Complex, for example, is historically significant because the building constructed in 1875 housed the first textile mill in New Bedford.

The condition of the structures in the sub-area are generally good. Although nearly all of the buildings are underutilized or vacant, their construction is relatively sound for rehabilitation. The site conditions, however, are poor. Paved areas for parking and maneuvering need improvement. Also, the sites are littered with open storage and little landscaping.

■ Land Use

Only one of the three sites in the sub-area offers Harbor frontage. This site, which contains the Revere Copper Company, has a water depth of -5 feet below mean low water next to its bulkhead. Although the facility continues to be active, the manufacturing operation does not receive or send cargo by water.

■ Ownership and Utilization

The parcels in the sub-area are under both public and private ownership. Nearly all of the buildings within the sub-area are underutilized or vacant. Vacancy rates are estimated to be between 75% in 80%. Buildings that are in use now support manufacturing, wholesaling, and other retailing industries. A limited amount of textile manufacturing continues in the area.

■ Issues facing the Mill Zone

Building Reuse

The high costs for the adaptive reuse of the large industrial structures represents a constraint to the redevelopment of this site.

Land Use Flexibility

This site lies outside of the DPA, and ,therefore, could be developed for a wide range of non-water dependent uses. Possible uses include residential, hotel, and other mixed-use developments.

Development Linkages

Development of these sites could be supported by appropriate use of adjacent vacant properties at the rail terminal site, and the Standard Times Field site. These sites could provide major public amenities or services such as parking which would raise the value of the mill complexes.

Access and Circulation

While vehicular highway access is more direct on the mill complex located on the southern portion of the Harbor, the Wamsutta Mills complex and the Revere Copper

facility lack direct access to Route 18 or Interstate 195. Solution to these constraints should be analyzed to solve the current underutilization of the site.

RESIDENTIAL SUBAREA

The Residential includes remaining portions of the Harbor shore in New Bedford and Fairhaven. The character of the residential areas varies considerably between the two communities.

The Fairhaven side of the Harbor contains the largest concentration of housing within the planning area. Residential neighborhoods are actually the predominate land use along the Fairhaven waterfront and do not present a significant land use conflict with marine services that are present nearby. The single family residential areas have maintained their integrity and include a housing stock that is in good condition. Many of the homes along the northern portions of the waterfront offer impressive views of the Harbor.

Residential areas on the New Bedford side of the Harbor are limited and in poor condition. The extreme northern portion of the waterfront planning area, near Route 6, contains a small area of homes. Isolated residences are also present in other portions of New Bedford's waterfront. These properties are isolated and surrounded by industrial uses and vacant parcels. Residential neighborhoods to the south and west of New Bedford's waterfront are severed by Route 18 on the west and deteriorated mill structures on the north and south.

■ Land Use

Residential areas in the New Bedford/Fairhaven Harbor area are adjacent to industrial, commercial, and marine related uses. Although the low-intensity of these uses on the Fairhaven side of the Harbor minimizes land use conflicts, the transportation infrastructure and more intense industrial and marine service activities on the New Bedford side are presently incompatible with residential uses.

■ Ownership and Utilization

Tenure of ownership in the residential areas varies between the New Bedford and Fairhaven sides of the Harbor. The homes in Fairhaven are predominately owned by

the occupant, while housing on the New Bedford side primarily consists of multi-family rental properties.

■ Key Issues for Future Use and Development

Neighborhood Preservation

The physical state of the Fairhaven waterfront neighborhoods will depend on the intensity and quality of future development efforts in the Harbor area. Regulations and land-use controls in Fairhaven should consider neighborhood preservation as an important priority.

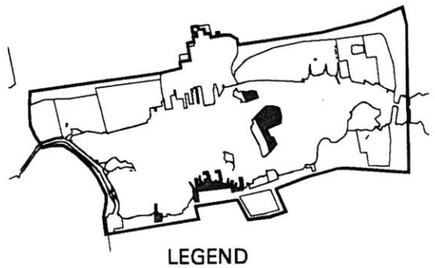
Residential Amenities

As Harbor redevelopment efforts create improved recreational open space amenities, the quality of the residential areas surrounding the waterfront will be improved. Linking these improvements to adjacent residential neighborhoods will be catalysts for neighborhood rejuvenation.

Historic Designation of Residential Waterfront

Future planning efforts for the Harbor should also explore the constraints and opportunities that would derive from a historic district designation for Fairhaven's waterfront residential districts affected by the development of the Harbor, so as to contribute to their preservation and improvement.

Commercial Islands



LEGEND

- Underutilized/Vacant
- Tanks
- Buildings
- Water
- Planning Area Boundary
- Planning Sub-Area Boundary
- Parcel Boundary
- Roads
- Rails

Sources

Buildings and Parcels: City of New Bedford digital data.
Water Depths: NOAA Nautical Chart, 1993 (1:20,000).
Transportation-New Bedford: City of New Bedford digital data.
Transportation-Fairhaven: MassGIS digital data, 1980s (1:100,000).

N

0 300 600 900 1200

SCALE IN FEET

State Pier

Fish Island

NEW BEDFORD

Popes Island

FAIRHAVEN BRIDGE

D.N. Kelly & Son

Crow Island

Union Wharf

Hathaway-Braley's Wharf

ROUTE 6

MAIN

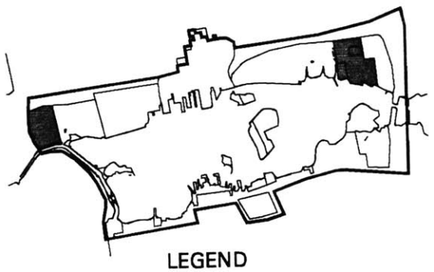
Fairhaven Shipyard

Various Marine Service Industries

UNION

FORT

The Mill Zone



LEGEND

- Underutilized/Vacant
- Tanks
- Buildings
- Water
- Planning Area Boundary
- Planning Sub-Area Boundary
- Parcel Boundary
- Roads
- Rails

Sources

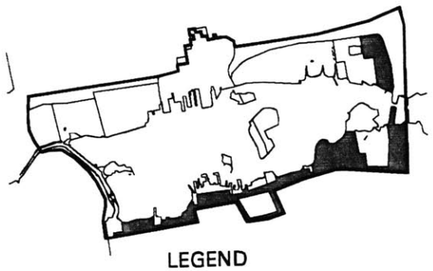
Buildings and Parcels: City of New Bedford digital data.
Water Depths: NOAA Nautical Chart, 1993 (1:20,000).
Transportation-New Bedford: City of New Bedford digital data.
Transportation-Fairhaven: MassGIS digital data, 1980s (1:100,000).

N

0 312 625 1250 1875 2500

SCALE IN FEET

Residential Districts



LEGEND

- Tanks
- Buildings
- Water
- Planning Area Boundary
- Planning Sub-Area Boundary
- Parcel Boundary
- Roads
- Rails

Sources

Buildings and Parcels: City of New Bedford digital data.
Water Depths: NOAA Nautical Chart, 1993 (1:20,000).
Transportation-New Bedford: City of New Bedford digital data.
Transportation-Fairhaven: MassGIS digital data, 1980s (1:100,000).

N

0 312 625 1250 1875 2500

SCALE IN FEET

Acushnet River
Popes Island
Marsh Island
Riverside Cemetery
Crow Island
Palmer's Island
Cushman Park
Route 6
Main St
Church St

FIGURES: LIST AND SOURCE

■ Introduction

Figure I-1: Bird's Eye View of New Bedford, 1876
Source: *Not Just Anywhere, The Story of WHALE*, 1995

■ Chapter One: Crisis and Hope

Figure 1-1: Regional Setting
Source: National Park Special Resource Study, 1992.

Figure 1-2: Regional Context
Source: New Bedford-Fairhaven Harbor Study. MIT, 1996.

Figure 1-3: Predominant Land Uses
Source: New Bedford-Fairhaven Harbor Study. MIT, 1996.

Figure 1-4: Existing Marine Industry Services
Source: HMM New Bedford Harbor Study, 1993.

Figure 1-5: New Bedford-Fairhaven Harbor DPA Boundaries
Source: HMM New Bedford Harbor Study, 1993.

■ Chapter Two: The Challenge of Planning for New Bedford Harbor

Figure 2-1: New Bedford's Waterfront, circa 1890
Source: Spinner Collection, New Bedford.

Figure 2-2: Sunbeam, a New Bedford Whaling Ship
Source: Spinner Collection, New Bedford

Figure 2-3: New Bedford Wharves, circa 1870
Source: Spinner Collection, New Bedford

Figure 2-4: 1960s Urban Renewal in New Bedford
Source: *Not Just Anywhere, The Story of WHALE*, 1995.

Figure 2-5: Demolished Blocks for Route 18
Source: *Not Just Anywhere, The Story of WHALE*, 1995.

Figure 2-6: Historic District Streetscape
Source: photograph tracing

Figure 2-7: Hurricane Barrier
Source: MIT Study Team photograph

Figure 2-8: Commercial Fishermen Face an Uncertain Future in New Bedford
Source: MIT Study Team photograph

Figure 2-9: Regulatory Jurisdictions
Source: New Bedford-Fairhaven Harbor Study. MIT, 1996.

Figure 2-10: Regulations and Public Interests
Source: New Bedford-Fairhaven Harbor Study. MIT, 1996.

■ Chapter Three: Case Study Directions for the Working Waterfront

Figure 3-1: Fisherman at the Wheel
Source: Gloucester Planning Department

Figure 3-2: Gloucester Inner Harbor Land Uses
Source: Gloucester Special Resource Study, National Park Service, 1994.

Figure 3-3: Gloucester State Fish Pier Redevelopment Plan
Source: Massachusetts Land Bank, 1995.

Figure 3-4: Fall River's Tourism Waterfront
Source: Fall River Office of Economic Development

Figure 3-5: Possible Waterfront Activity at Fall River's Battleship Cove
Source: *Waterfront Development*, Torre, 1989, tracing.

Figure 3-6: Tourism Activity that References a Local Fishing Economy
Source: Heritage State Park Plan, 1989.

Figure 3-7: Baltimore's Inner Harbor Festival Marketplace
Source: Carpenter, tracing of photograph, 1996.

Figure 3-8: A Purse Seiner at Seattle's Fishermen's Terminal
Source: Ernst, Susan. 1989.

Figure 3-9: Seattle's Fishermen's Terminal Location and Site Plan
Source: Breen, Ann and Dick Rigby, *Waterfronts*, 1994.

Figure 3-10: Mystic Seaport
Source: photograph tracing.

Figure 3-11: An Oakland Park with Views of the Working Waterfront
Source: Ernst, John. 1989.

■ Chapter Four: Strategies for the Harbor

Figure 4-1: Balancing Uses to Create Mutual Benefits
Source: Carpenter.

Figure 4-2: Create Catalyst Developments
Source: Carpenter.

Figure 4-3: Connect the Harbor to Regional Development Initiatives
Source: Carpenter.

Figure 4-4: Develop Intermodal Linkages
Source: Carpenter

■ Chapter Five: The Urban Waterfront Plan

Figure 5-1: Urban Waterfront Plan Concept Diagram
Source: Carpenter.

Figure 5-2: Urban Waterfront
Source: New Bedford-Fairhaven Harbor Study. MIT, 1996

Figure 5-3: The Urban Waterfront Today
Source: MIT Study Team photograph, 1995.

Figure 5-4: Ships in the Harbor
Source: New Bedford-Fairhaven Harbor Study. MIT, 1996

Figure 5-5: Urban Waterfront Plan: Concept
Source: Carpenter

Figure 5-6: Urban Waterfront Plan: Circulation
Source: Carpenter

Figure 5-7: Harbor View of State Pier
Source: New Bedford-Fairhaven Harbor Study. MIT, 1996.

Figure 5-8: *Wanderer*, the Last Whaleship to Leave New Bedford
Source: Spinner Collection, New Bedford, 1995.

Figure 5-9: The Bourne Counting House Today
Source: New Bedford Special Resource Study, National Park Service. 1992.

Figure 5-10: The harbor taxi fleet will consist of underutilized commercial vessels
Source: Ernst, John. 1989.

Figure 5-11: Harbor Taxi Routes
Source: Carpenter

Figure 5-12: Waterfront Walk
Source: Carpenter

Figure 5-13: Harbor Trolley
Source: *Not Just Anywhere, The Story of WHALE*, 1995

Figure 5-14: Route 18 Existing Condition
Source: Source: *Not Just Anywhere, The Story of WHALE*, 1995.

Figure 5-15: View of Harbor Boulevard
Source: Heritage State Park Plan, 1989.

Figure 5-16: Sections of Existing Route 18 and Proposed Harbor Boulevard
Source: Heritage State Park Plan, 1989.

■ Chapter Six: Harbor Terminals Plan

Figure 6-1: Harbor Terminals Plan Concept Diagram
Source: Carpenter

Figure 6-2: Harbor Terminals
Source: New Bedford-Fairhaven Harbor Study, MIT, 1996

Figure 6-3: Existing North Terminal Business
Source: MIT Study Team photograph, 1995.

Figure 6-4: Harbor View of South Terminal
Source: MIT Study Team photograph, 1995.

Figure 6-5: Harbor View of Commonwealth Electric Site
Source: MIT Study Team photograph, 1995.

Figure 6-6: View of Old Railyard Site
Source: MIT Study Team photograph, 1995.

Figure 6-7: View of Proposed CDF #7 Site
Source: MIT Study Team photograph, 1995.

Figure 6-8: North Terminal Area Proposals
Source: Carpenter

Figure 6-9: South Terminal Area Proposals
Source: Carpenter

Figure 6-10: Existing Ferry Service Between New Bedford and the Islands
Source: Steamship Authority.

■ Chapter Seven: Open Space and Recreation Plan

Figure 7-1: Open Space/Recreation
Source: New Bedford-Fairhaven Harbor Study. MIT, 1996

Figure 7-2: View of Hurricane Barrier
Source: MIT Study Team photograph, 1995.

Figure 7-3: Existing Open Space on Pope's Island
Source: MIT Study Team photograph, 1995.

Figure 7-4: Recreational Boating Slips at Pope's Island
Source: MIT Study Team photograph, 1995.

Figure 7-5: Harbor Visual Analysis
Source: HMM New Bedford Harbor Study, 1993.

Figure 7-6: Existing Recreational Boating Sites
Source: HMM New Bedford Harbor Study, 1993.

Figure 7-7: Vision of Palmer's Island
Source: Heritage State Park Plan, 1989.

Figure 7-8: Harbor View of Palmer's Island Lighthouse
Source: MIT Study Team photograph, 1995.

Figure 7-9: Recreational Boating Slips at Palmers Cove Park
Source: Ernst, John. 1989.

Figure 7-10: Palmers Cove Park
Source: Carpenter

Figure 7-11: Current View of Standard Times Field
Source: MIT Study Team photograph, 1995.

Figure 7-12: Viewing the Harbor from the Boardwalk
Source: photograph tracing

■ Appendix: Supporting Harbor Subareas

Figure: Commercial Islands
Source: New Bedford-Fairhaven Harbor Study. MIT, 1996

Figure: Mill Zone
Source: New Bedford-Fairhaven Harbor Study. MIT, 1996

Figure: Residential Areas
Source: New Bedford-Fairhaven Harbor Study. MIT, 1996

REFERENCES

310 CMR 9.00: Waterways Regulations, Massachusetts Department of Environmental Protection

301 CMR 23.00: Review and Approval of Municipal Harbor Plans, Massachusetts Office of Environmental Affairs

301 CMR 25.00: Designation of Port Areas, Massachusetts Office of Environmental Affairs

Adamson, Deb. Public Relations Manager. Mystic Marine Life Aquarium, Personal Communication. 1996.

An Act Authorizing the City of New Bedford to Establish a Harbor Development Commission, Chapter 762, Acts and Resolves Passed by the General Court of Massachusetts, 1957

Anonymous, 1995. *"Seafood Futures"*. Seafood Business, Vol. 13. No 5., pp. 68.

"A Report on Historic High Water Marks in the Following Designated Port Areas: New-Bedford Fairhaven, Mount Hope Bay, Weymouth-Fore River, Plymouth-Cordage," prepared by Mapworks for Massachusetts Coastal Zone Management.

Austin, Allen. MBTA. Personal Communication, 1996.

Boss, Judith A. et al., New Bedford, A Pictorial History. Virginia Beach: Donner Co. Publishing, 1983.

Breen, Ann, and Dick Rigby. Caution: Working Waterfront. Washington D.C.: The Waterfront Press, 1985.

Breen, Ann and Dick Rigby. *Waterfronts*. 1994.

Brengle, Anne. Director, The Whaling Museum. Personal Communication, 1996.

Briefing Booklet, "Harbor Visions! New Bedford: Shaping the City's Edge," Waterfront Historic Area League, October 1995

Brown, G. M. 1995. *"Social Costs of the Casino Industry"*. Casino Development. How would casinos affect the New England economy? pp. 107-114. Proceedings of a Symposium sponsored by the Federal Reserve Bank of Boston. Special Report #2, October, 1995. 155p.

Burns, G. 1996. *"All Together Now: Make that to go"*, Business Week. January 8, 1996.

Building Zone Map of the City of New Bedford, prepared by the Engineering Division of the Department of Public Works, 1990

Buzzard's Bay Project. Buzzard's Bay Comprehensive Conservation and Management Plan, Executive Summary, 1991.

Camara, Ed. Personal Communication, 1996.

Case, K. and C.J. Mayer. 1995. *"The Housing Cycle in Eastern Massachusetts"*, New England Economic Review; March/April 1995. Published by the Federal Reserve Bank of Boston. pp. 24-40.

Cavanaugh, E.F. and L. Lewis. 1990. *Rivers and Harbors Program Report..* Commonwealth of Massachusetts Department of Environmental Management, Division of Waterways.

Cavanaugh, Gene. Personal Communication, 1996.

Chapter 91: An Introduction to the Massachusetts Public Waterfront Act & Its Regulations, Coastal Brief, Massachusetts Coastal Zone Management/EOEA

City of New Bedford Planning Department. *Aerial Photographs of New Bedford Waterfront*, Scale 1"=100', 1986.

City of New Bedford Planning Department. *City Comprehensive Recreation and Open Space Plan, 1993-1998*. 1993.

City of New Bedford Planning Department. Map of Existing Land Uses, City of New Bedford Master Plan, Scale 1"=3000'. 1991.

City of New Bedford Planning Department. *New Bedford-Fairhaven Harbor Master Plan Study Area Map*, Scale 1"=400'.

Clayton, Barbara and Kathleen Whitley. Guide to New Bedford. Montpelier, VT: Capital City Press, 1986.

Comprehensive Recreation and Open Space Plan, 1993-1998, City of New Bedford Planning Department. 1993.

Courtney, Farah. Personal Communication, 1996.

Downing, Cathy. Personal Interview, 1996.

DPA Fact Sheet No. 1: The Regulatory Framework for Licensing and Planning in a DPA

DPA Fact Sheet No. 2: The Regulatory Framework for Modifying DPA Boundaries

Designated Port Area: New Bedford-Fairhaven, Executive Office of Environmental Affairs Coastal Zone Management Program (Map)

Ernst, John. *Waterfront Visions.* An Unpublished Thesis: Michigan State University, 1989.

FAO. 1993.*"1993 FAO Yearbook, Fishery Statistics"*, United Nations, Food and Agriculture Organization. Vol. 76.

Fineberg, J.D., J. Urbonas, and P. Long. 1995. *Basic Impacts From the Wampanoag Casino Complex prepared for the Town of Dartmouth.* The Collaborative, Boulder, CO. Final Report. October 4, 1995.

Fineberg, J.D., J. Urbonas, and P. Long. 1995. *Market Analysis prepared for the Town of Dartmouth.* The Collaborative, Boulder, CO. Final Report, October 4, 1995.

Flanagan, W. 1995. *"New Industry: mariculture"*, Forbes. October 23, 1995.

Fontaine, Molly. City of New Bedford, Environmental Planner. Personal Communication, 1996.

Garland, Joseph, The Gloucester Guide. Rockport, MA: Protean Press, 1990.

General Mills, Incorporated. *Annual Report 1995.* Minneapolis: General Mills, Inc.

Gilmore, R., et al. 1994. *Final Report- Fish Exchange Feasibility.* Prepared for Conservation Law Foundation. GIC Trade. September 14, 1994.

The Governor's Commission on Commonwealth Port Development. 1994. *Final Report.* Hogan, W., D. Georgianna, and T. Huff. 1991. *The Massachusetts Marine Economy.* Massachusetts Centers of Excellence Corporation.

"Harbor Management for the Short-Term and Long-Term," MCZM Harbor Planning Program

Harbormaster's Mooring and Anchorage Rules and Regulations in Fairhaven, Massachusetts Harbor Planning Guidelines, Harbor Planning Program, MCZM

Herschman, Marc, Susan Heikkala, and Caroline Tobin. *"Seattle's Waterfront: The Walker's Guide to the History of Elliot Bay."* Waterfront Awareness. Seattle: University of Washington Press, 1981.

HMM Associates, Inc. Harbor and Marine Facilities Inventory, HMM Plan, 1992.

HMM Associates, Inc. New Bedford Harbor, Comprehensive Harbor Plan Study, 1993.

Janik, Dave. Personal Communication, 1996.

Kearney, A.T. Company, Inc., 1994. *Massachusetts Government Land Bank, Gloucester State Fish Pier Redevelopment Project: Comprehensive Industry Assessment and Pier Redevelopment Plan.* January, 1994.

Knapschaefer, J. 1995. *"Putting man into a fish's environment".* Business Week, May 15, 1995.

Lewis, Les. Department of Environmental Management. Director, Rivers and Harbors Program. Personal Communication, 1996.

Manley, Martin. New Bedford Habor Development Commission, Director. Personal Communication, 1996.

Marine Sciences Laboratory, University of Massachusetts at Dartmouth, Marine Sciences Laboratory Status Report, Dartmouth, MA: Univ. of Massachusetts at Dartmouth, 1991.

Massachusetts Bay Transportation Authority. *Environmental Notification Form Volume 1, New Bedford-Fall River Commuter Rail Project.* September, 1995.

Massachusetts Institute of Technology: Department of Urban Studies and Planning. *New Bedford-Fairhaven Harbor Study Briefing Book.* 1996.

Melville, Herman. Moby Dick. New York: Albert and Charles Boni, Inc., 1933.

Moukheiber, Z. 1996. *"The great Wal-Mart Massacre, Part II".* Forbes. January 22, 1996, pp 44-45.

Mystic Marine Life Aquarium, *Annual Report 1994-1995.* Mystic, CT: Mystic Marine Life Aquarium.

National Marine and Fishery Organization, National Marine and Fishery Organization 1992 Annual Report., Woods Hole, MA: National Marine and Fishery Organization, 1992.

National Marine Fisheries Service. 1995. *Fisheries of the United States, 1994: Current Fishery Statistics No. 9400.* U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service.

National Marine Manufacturers Association, 200 East Randolph Street, Suite 5100, Chicago, IL 60601

National Park Service. 1994. *Special Resource Study For New Bedford, Massachusetts.* National Park Service, North Atlantic Region, Boston, Massachusetts.

New Bedford, Massachusetts USGS Map, Scale 1:50,000.

New Bedford, Massachusetts USGS Map, Scale 1:25,000

New Bedford Harbor ROD II, Proposed Dredging Areas and CDFs (Map), attachment to notes of the New Bedford Harbor Superfund Forum Meeting, September 20, 1995

New Bedford Tax Assessor's Office. *New Bedford Waterfront Parcels Maps,* 1987.

New England Fishery Management Council. 1993. *"Final Amendment #5 to the Northeast Multispecies Fishery Management Plan"*. Vol. 1.

New England Fishery Management Council, 1993. *"Final Amendment #4 and Supplemental Environmental Impact Statement to the Sea Scallop Fishery Management Plan"*, July 1993.

New England Fishery Management Council. 1995. *"Draft Proposals for Amendment #7 to the Northeast Multispecies Fishery Management Plan"*. August 15, 1995.

Notes of the New Bedford Harbor Superfund Forum Meeting, September 20, 1995

Port of Seattle. Fisherman's Terminal Redevelopment Study. Seattle: August, 1985.

Port of Seattle. Fishermen's Terminal Site Development Plan. Seattle: June, 1988.

Port of Seattle. Fishermen's Terminal Redevelopment Panel Recommendations. Seattle: December, 1985.

Rada, J. 1991. *"The World Beneath the Waves"*. Southern Living. February, 1991.

Rafferty, Laurel. Massachusetts Coastal Zone Management. Harbor Planning Coordinator. Personal Communication, 1996.

Seattle Department of Construction and Land Use. Seattle's Commercial and Industrial Shorelines: Inventory and Background Report. Seattle Shoreline Master Program Revision Project. Seattle: September, 1983.

Seattle Shoreline Master Program, Shoreline Policies. Seattle: 1976.

Seaport Bond DPA Dredging Plan (3-page outline and description distributed at Harbor Planning Committee meeting, October 18, 1995)

Section IV, State Land Use Regulations, subsection 1: Chapter 91 and subsection 2: The Massachusetts Designated Port Area Program

Shearman, Abraham. Directions for Buzzard's Bay and New Bedford. 1981, originally published 1821.

Sisson, P. and L. Standish. 1995. *A Report on the Fishing Industry: Status, Issues, and Recommendations*. Commonwealth Fishing Industry Coordinator, University of Massachusetts/Dartmouth.

Smith Travel Research,Hendersonville, TN. 1994.

Snow-Cotter, Susan. Massachusetts Coastal Zone Management. Personal Communication, 1996.

Soares, Scott. Aquaculture Specialist. Southeastern Regional Planning and Economic Development Agency. Personal Communication, 1996.

Southeastern Massachusetts Metro Planning Organization. *Downtown New Bedford Parking and Circulation Study*. 1984.

Souza, Tony. Director, WHALE. Personal Communication, 1996.

Special Resource Study for New Bedford Massachusetts, National Park Service, North Atlantic Region, Boston, Massachusetts (Map 3: Existing New Bedford National Register Districts)

Standard Times "Agenda '94: Pulling it Together, A series of essays on the economic future of New Bedford" and "Agenda '95: Building Our Future, Essays on the economic future of Southeastern Massachusetts"

Taylor, L. 1993. *Aquariums, Windows to Nature*. Prentiss Hall General Reference, New York.

Torre, L. Azeo. Waterfront Development. New York: Van Nostrand Reinhold, 1989.

Tyson Foods, Incorporated, *Annual Report 1994*. Tyson Foods, Inc. 2210 West Oaklawn Drive, Springdale, AR 72762.

Town of Fairhaven Conservation Commission By-Law, May 10,1988

Town of Fairhaven Planning Board. *Zoning Map*. 1990.

Town of Fairhaven Tax Assessor's Office. Fairhaven Waterfront Tax Assessor's Maps, Scale 1"=60'.

Town of Fairhaven Wetland Protection By-Law, May 10, 1988

Town of Fairhaven Union Wharf Rules and Regulations

U.S. Department of Labor, Bureau of Labor Statistics. 1985-1994, various years. *Employment and Wages, Annual Averages.*

Update on the Report of the Governor's Commission on Port Development, Executive Office of Environmental Affairs, Coastal Zone Management

Waterfront Historic Area League. Briefing Booklet: *"Harbor Visions! New Bedford"*. 1995.

Woods Hole Oceanographic Institution, Woods Hole Oceanographic Institution 1992 Annual Report., Woods Hole, MA: Woods Hole Oceanographic Institute, 1992.

Zoning Map, Town of Fairhaven, Fairhaven Planning Board, August 23,1990

Zoning Laws of the City of New Bedford, as of October, 1995

Zoning By-Laws, Town of Fairhaven, as amended through July 1, 1991